S. HRG. 98-1202

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT, AND CERTAIN INDEPENDENT AGENCIES APPROPRIATIONS FOR FISCAL YEAR 1985

HEARINGS

BEFORE A

SUBCOMMITTEE OF THE

COMMITTEE ON APPROPRIATIONS
UNITED STATES SENATE

NINETY-EIGHTH CONGRESS

SECOND SESSION

ON

H.R. 5713

AN ACT MAKING APPROPRIATIONS FOR THE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT, AND FOR SUNDRY INDEPENDENT AGENCIES, BOARDS, COMMISSIONS, CORPORATIONS, AND OFFICES FOR THE FISCAL YEAR ENDING SEPTEMBER 30, 1985, AND FOR OTHER PURPOSES

PART 3—(Pages 1679-2311)

NONDEPARTMENTAL WITNESSES

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DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT-INDEPENDENT AGENCIES APPROPRIATIONS FOR FISCAL YEAR 1985

MONDAY, MAY 7, 1984

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, DC.

The subcommittee met at 10:25 a.m. in room SD–124, Dirksen Senate Office Building, Hon. Pete Domenici presiding.

Senators present: Garn, Domenici, Stennis, and Mattingly.

NONDEPARTMENTAL WITNESSES

ENVIRONMENTAL PROTECTION AGENCY

STATEMENT OF HON. ROBERT T. STAFFORD, U.S. SENATOR FROM VERMONT

Senator DOMENICI. Senator Stafford, I apologize for the delay. I would like to tell you it was because it is my birthday, but that really isn't true. There was a traffic jam, so we are going to proceed.

The subcommittee will come to order.

This morning we begin hearing the first of 2 days of public witnesses. Since February 23, we have been taking testimony from the 18 agencies under the jurisdiction of the subcommittee. As a result of those hearings, we have built a record as to the administration's policy and budget request on literally hundreds of programs.

Between now and tomorrow evening, we will hear from about 60 individuals and organizations who are taking their time to share their thoughts on how these programs might be improved and, hopefully, how we can increase the program benefits while containing the program costs. Most of the witnesses are in an excellent position to advise us in these matters since they are on the receiving end of the programs and can separate what is intended from what is actually being accomplished.

In the past, the subcommittee has found the testimony presented at the public witness hearings to be of great value in the subcommittee's deliberations.

Because of the sheer volume that we have to cover, I will have to ask each witness to confine their presentation to a maximum of 5 minutes. This will give us time to ask questions and will assure that all of the witnesses will have an equal opportunity to be heard. Of course, all of our witnesses' statements will be placed in the record.

Before beginning, I would like to thank Cathy Gosweiler of the subcommittee staff for her very professional courtesy and untiring efforts in coordinating these very comprehensive and complicated hearings.

I am very pleased to have my colleague and friend, Senator Stafford, chairman of the Environment and Public Works Committee, as our first witness today.

It is good to have you. If you have a statement, it will be made a part of the record. Proceed as you see fit.

Senator STAFFORD. Thank you very much, Mr. Chairman. I had to struggle to get back from Vermont myself. I had a chance to review my statement and eliminate part of it.

Mr. Chairman, as chairman of the Environment and Public Works Committee, I appreciate this opportunity to discuss funding for the Environmental Protection Agency. My testimony will address three areas of major concern—overall funding for the Agency's operating budget, an initiative on asbestos in schools, and funds for the Superfund program.

In each of these areas, the Environment and Public Works Committee has recommended higher funding levels than those contained in the President's budget. I intend to make every effort to see that the Senate budget resolution accommodates these higher levels.

In total, they amount to about $142 billion, Mr. Chairman.

The committee recommended in its March report to the Budget Committee that the President's request of $1.209 billion for EPA's operating budget be increased to $1.353 billion. This is the same level that was actually appropriated for fiscal year 1981 and, thus, represents a reduction in real resources of 23 percent from 1981 levels, taking inflation into account.

The level of $1.353 billion was assumed in the budget resolution adopted by the Senate last year and is also the level—I think this is important—Administrator Ruckelshaus requested for fiscal year 1985 from the Office of Management and Budget. No doubt the Agency needs and can responsibly use that level of funds in carrying out its statutory duties.

I am providing for the record, Mr. Chairman, EPA responses to questions the Agency was asked in the budget hearing held by the Committee on Environment and Public Works. The responses delineate some of the adverse effects of reductions from the level requested by the Administrator to the level requested by the President.

In my statement today, I would like to highlight some of these effects. I would also like to emphasize that any action to freeze the Agency's budget at the level close to the appropriated 1984 level of $1.114 billion would have an even more detrimental impact on the ability to administer and enforce environmental laws that are the responsibility of the Agency.

Mr. Chairman, I will simply point out that the next few pages of my prepared statement comments very similarly on the nonpoint source, acid rain, safe drinking water, pretreatment, and toxic substance areas, and most importantly, on enforcement and research and development.

Mr. Chairman, I will skip to page 7 of my statement. I am including for your information and for the record a table showing the distribution of funding by appropriation of the $1.353 billion the EPA requested from the Office of Management and Budget. While some members may have somewhat different priorities, this budget does reflect the Agency's priorities and approximates those of the Committee on Environment and Public Works.

The Committee on Environment and Public Works recommended that $50 million be provided to EPA this year for a program to provide technical and financial assistance to deal with abatement of asbestos in schools.

EPA has moved forward this year on a regulatory enforcement effort, but the existing EPA strategy is not sufficient. What is required is a grant and loan program, such as that introduced in late March by 15 Senators, including several members of this subcommittee. This proposal would establish a grant and loan program for local education agencies.

Although enactment of an appropriations bill may precede consideration of the asbestos bill, an abatement program for schools should be an important element of the Agency's fiscal year 1985 budget. It could be funded subject to enactment of authorizing legislation.

SUPERFUND PROGRAM

Finally, Mr. Chairman, I would like to turn to the Superfund program. The $753 million level of funding recommended by the Committee on Environment and Public Works is based on Administrator Ruckelshaus' September request to the Office of Management and Budget. The committee's request is 83 percent above current appropriation levels.

Clearly, the Agency can commit $753 million. A recent Agency study estimated that future Superfund needs would range from $8 billion to $16 billion. Currently, while there are 546 sites on the national priority list, cleanup has been completed at only a handful of sites and EPA expects to add over 100 sites to the list this summer.

The Agency is now moving forcefully to curb the threats posed by abandoned hazardous waste sites. It would be a tragedy to let this momentum be slowed by a funding level that handicaps the program.

Adopting our recommended level requires that additional money be raised in fiscal year 1985, but we are now considering an extension of Superfund and plan to report a bill by July 1 of this year.

With respect to Superfund, I would like to express my appreciation both to this subcommittee and the full committee for including language in last year's bill requiring that Superfund money be passed directly to the Department of Health and Human Services. Unlike prior years, HHS received its funds on a timely basis. We urge you to include such language again this year.

Each of our committees has a role to play in efforts to protect the environment. While the authorizing committee must propose substantive legislation, the Appropriations Committee faces the difficult task of allocating limited resources to competing programs. Without your support, the Agency literally cannot enforce the laws or meet statutory mandates imposed by the Congress.

This year, the administration has requested increased funding for EPA, but we believe the Agency requires resources beyond those proposed in the budget. Administrator Ruckelshaus sought a higher level of funding, one which he believed necessary to fulfill the Agency's responsibilities. I sincerely hope that each of you can agree with Mr. Ruckelshaus and those of us on the authorizing committee that an increase above the President's request should be adopted.

In any event, allow me to express my appreciation for your courtesy in hearing me out on behalf of the Environment and Public Works Committee.

Senator DOMENICI. Thank you. Your entire statement, as well as statements prepared by Senators Randolph, Baucus, and Heflin, will be made a part of the record.

[The statements follow:]

STATEMENT OF SENATOR ROBERT STAFFORD

Mr. Chairman, as Chairman of the Committee on Environment and Public Works, I appreciate this opportunity to discuss funding for the Environmental Protection Agency.

My testimony will address three areas of major concern: overall funding for the Agency's operating budget, an initiative on asbestos in schools, and funds for the Superfund program.

In each of these areas the Environment and Public Works Committee has recommended higher funding levels than those contained in the President's budget. I intend to make every effort to see that the Senate Budget Resolution accommodates these higher levels.

Operating Budget

The Committee on Environment and Public Works recommended in its March report to the Budget Committee that the President's request of $1.209 billion for EPA's operating budget be increased to $1.353 billion. This is the same level that was actually appropriated for fiscal year 1981, and thus represents a reduction in real resources of 23 percent from 1981 levels, taking inflation into account.

The level of $1.353 billion was assumed in the Budget Resolution adopted by the Senate last year, and is also the level Administrator Ruckelshaus requested for 1985 from the Office of Management and Budget. There is no doubt that the Agency needs and can responsibly use that level of funds in carrying out its statutory duties.

I am providing for the record EPA responses to questions the Agency was asked in the budget hearing held by the Committee on Environment and Public Works. The responses delineate some of the adverse effects of reductions from the level requested by the Administrator to the level requested by the President.

In my statement today, I would like to highlight some of those effects. I would also like to emphasize that any action to "freeze" the Agency's budget at a level close to the 1984 appropriated level of $1.114 billion would have an even more detrimental impact on the ability of the Agency to administer and enforce environmental laws.

Restricting funding to the $1.209 billion level of the Administration request would eliminate almost $35 million in funding that EPA proposed to spend on an acid rain control program and additional acid rain research. I believe there is no disagreement that accelerated research on acid rain is a necessity, and would urge that the Agency be provided with the full amount it originally determined it could responsibly use.

Enforcement of other air pollution control requirements will also suffer if the President's request is not increased. EPA requested $3 million more than is provided in the President's budget to address vehicle tampering and fuel switching. Agency officials testified before our Committee that misfueling of vehicles with leaded gasoline and tampering with vehicle emission control systems pose significantly more serious threats to public health than previously recognized. Even modest investments in EPA and State enforcement are known to be effective in reducing these illegal activities and their adverse effects.

The original EPA budget submission to OMB shows that an additional $7 million for programs under the Safe Drinking Water Act and $25 million for the Clean Water Act is needed if those programs are to afford even the minimum protection intended. The additional $7 million is needed in the drinking water program to meet court ordered underground waste injection permitting schedules and to assist rural water systems to attain compliance with the Safe Drinking Water Act.

Under the Clean Water Act, NPDES permits and pretreatment programs are the key mechanisms to control the discharge of toxic industrial pollutants. There is a large backlog of expired NPDES permits that must be reissued before new regulations to limit toxic discharges become effective.

Although the Agency has projected that permits for all major dischargers will be reissued by the end of FY 1985, data submitted to the Environment and Public Works Committee by EPA suggest that that projection may be quite optimistic. These data show that the Agency has only one sixth the resources needed to resolve expected permit modification requests, an integral step in the reissuance of permits. To the extent that these resources are inadequate and new permit requirements are not put in place, toxic effluents will continue to affect water quality and threaten human health.

The pretreatment program, which is intended to control the discharge of toxic industrial pollutants into municipal treatment plants, has even less support. EPA faces an enormous workload -- to review several thousand industrial monitoring reports and to review and approve over 600 local pretreatment programs. The Agency proposes to implement the program with only 28 people.

My final observation in the water quality area is that the President's budget provides no resources to deal with pollution from so-called nonpoint sources. These sources include runoff from agricultural and forestry activities, construction sites, and urban streets and parking areas. Water pollution from nonpoint sources is, in many instances, more serious than from specific "point" dischargers.

The Committee on Environment and Public Works has reported a bill based on what the States and EPA have said is needed to begin to deal with the nonpoint source pollution problem. S. 2006 authorizes $70 million for 1985, an amount we considered a modest investment with large potential benefits. Whether or not $70 million is the appropriate level, and even if S. 2006 does not become law, it is clear that EPA has the authority to allocate resources to guide and assist the States. Such action by EPA is imperative if we are to make any real headway on this serious national problem.

In the Office of Toxic Substances, the President's budget would severely constrain the Agency's ability to regulate risks to human health and the environment from toxic chemicals. There are presently no resources in the President's budget for detailed evaluation and regulation of chemicals that are identified as problems during FY 1984 and 1985. According to Agency estimates, provision of 40 additional staff and $5.0 million would allow it to minimize the growing backlog of chemicals awaiting regulation by providing resources to develop regulations where they are needed.

The above examples of budgetary constraints will necessarily affect the Agency's enforcement capability either directly or indirectly. As you have heard me say before, this is one of my major concerns, because I believe that strong enforcement is necessary to give our environmental laws meaning. The Agency has outlined an ambitious enforcement program for the present and may hope to achieve it within the President's budget levels. However, I feel compelled to note that Mr. Ruckelshaus' September submission to OMB proposed a total funding level specifically for enforcement activities 18 percent higher than the current request. The reduction below the Administrator's request, coupled with cutbacks in programs needed to support enforcement efforts, lead me to question whether the Agency's good intentions can come to fruition.

Another major area of concern is research and development. There is a consensus among both environmental groups and industry that the scientific base on which the Agency's regulatory decisions are founded has seriously eroded in recent years because of severe cuts in the Agency's research and development budget. The research and development program has absorbed the brunt of the reductions in the Agency's budget over the last four years, suffering cuts between 1978 and 1983 of 50 percent.

Several increases in the Administration's budget proposal for research and development that have been proposed by a working group of industrial and environmental representatives. These should be seriously considered by this subcommittee.

The proposals include an additional $32 million for health and environment effects assessment, which could prove invaluable in the development of techniques for exposure assessment, biological monitoring, and extrapolation of animal data to humans.

Control technology development is a critical component in effecting compliance with standards and enhancing the quality of the environment. Additional resources above the fiscal year 1985 budget request should be included to support key research efforts in the following categories:

--municipal wastewater treatment: to improve facility compliance;

--drinking water: to accelerate research into disinfectant by-products;

--hazardous waste: to improve control and clean-up technologies;

--energy: to evaluate coal cleaning practices and retrofit technologies including those for control of emissions of NOx and volatile organic compounds and;

--long-term exploratory research.

I am also including, for your information and for the record, a table showing the distribution of funding by appropriation account of the $1.353 billion that EPA requested from OMB. While some Members may have somewhat different priorities, this budget does reflect the Agency's priorities, and approximates those of the Committee on Environment and Public Works.

Asbestos in Schools

The Committee on Environment and Public Works recommended that $50 million be provided to EPA this year for a program to provide technical and financial assistance to deal with abatement of asbestos in schools.

EPA has moved forward this year on a regulatory enforcement effort, but the existing EPA strategy is not sufficient. What is required is a grant and loan program such as that introduced in late March by fifteen Senators including several members of this subcommittee. This proposal would establish a grant and loan program for local education agencies.

Although enactment of an appropriations bill may precede consideration of the asbestos bill, an abatement program for schools should be an important element of the Agency's FY 1985 budget. It could be funded subject to enactment of authorizing legislation.

Superfund

Finally, I would like to turn to the Superfund program. The $753 million level of funding recommended by the Committee is based on Administrator Ruckelshaus' September request to OMB. The Committee's request is 83 percent above current appropriation levels.

Clearly, the Agency can commit $753 million. A recent Agency study estimated that future Superfund needs would range from $8 to $16 billion. Currently, while there are 546 sites on the National Priority List, cleanup has been completed at only a handful of sites. And, EPA expects to add over 100 sites to the list this summer. The Agency is now moving forcefully to curb the threats posed by abandoned hazardous waste sites. It would be a tragedy to slow this momentum with a funding level that handicaps the program.

Adopting our recommended level requires that additional money be raised in FY 1985, but we are now considering an extension of Superfund and plan to report a bill by July first of this year.

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Each of our Committees has a role to play in efforts to protect the environment. While the authorizing Committee must propose substantive legislation, the Appropriations Committee faces the difficult task of allocating limited resources to competing programs. Without your support the Agency literally cannot enforce the laws or meet statutory mandates imposed by the Congress.

This year, the Administration has requested increased funding for EPA. But the Agency requires resources beyond those proposed in the budget.

Administrator Ruckelshaus sought a higher level of funding, one which he believed necessary to fulfill the Agency's responsibilities. I sincerely hope that each of you can agree with Mr. Ruckelshaus and those of us on the authorizing committee that an increase above the President's request should be adopted.

In any event, allow me to express my appreciation for your courtesy in hearing us out.

APPROPRIATION ACCOUNTS

	EPA Request to OMB FY 85
Salaries & Expenses	683,089.9
Abatement Control Compliance	440,562.0
Research & Development	211,149.2
Buildings & Facilities	18,800.2
Total operating budget	1,353,601.1
Superfund	752,812.0
Construction Grants	2,400,000.0

OPERATING BUDGET-OMB REQUEST

Question: Your September, 1983 request to OMB for the operating budget recommended a total funding level of $1.353 billion.

- o Eight percent of the increase above the Administration request would have been devoted to hazardous waste. What aspects of the hazardous waste program will be cut back because of the failure to get that additional 8 percent?

Answer: Let me begin my response by pointing out that the 1985 Budget for the Hazardous Waste program has been increased by $40 million over the 1984 level, reflecting the President's and my view that the control of Hazardous Waste is of utmost environmental concern. Having said that, I will explain some of those items contained in my request to OMB which are not funded at the requested level.

The reduction to the research and development portion of the hazardous waste program occurs primarily in the engineering program where the resources provided for land disposal and alternative treatment technologies were deemed sufficient given the status of RCRA regulations and industrial efforts in these areas. The Agency also decided to expand the time frame for completing some of the miscellaneous regulatory amendments to existing rules and minor hazardous waste listings which are not mandated by the current statute.

The three percent reduction to the permitting program will minimally reduce EPA technical assistance to and oversight of the States. The grant will continue to provide sufficient funds to maintain the State permitting and enforcement efforts at the same level as 1984. EPA oversight of State inspections was also reduced. These are used to evaluate the quality of State inspections and the effectiveness of their enforcement programs.

The President's request contains sufficient resources to do approximately 900 oversight inspections at hazardous waste facilities to evaluate the quality of State inspections and the effectiveness of State enforcement programs. We believe that the level of activity is adequate to ensure quality State enforcement programs.

Question: Over one third of the increase above the levels presented in the President's budget would have been devoted to the air and water programs. Could you specify for the Committee how those increased resources would have been used?

Answer: In the Air program, the reductions to the research and development portion of the air program occur primarily in the Hazardous Air Pollutant (HAP) and Gases and Particles (GAP) programs. In HAP, the reduction occurs in the elimination of an indoor air research program where EPA lacks regulatory authority in this area. In GAP, the reduction occurs in health effects research and in regional air modeling programs where sufficient resources were already available. Between 1984 and 1985, there is an overall increase of $3 million in air research.

In addition, the reduction to the Abatement and Control portion of the air program occurs primarily in the portion of State grants which were to assist State and local agencies in responding to anticipated new regulatory initiatives for acid deposition. This is consistent with the Agency's position to support only research and development efforts for acid rain. In addition, Headquarters and Regional resources to implement an acid rain control program were reduced. Other reductions reflect completion of technical studies and analysis supporting development of stationary source standards.

In the area of air enforcement, the reduction to the Enforcement portion of the air program occurs primarily in the mobile source tampering and fuel switching and recall programs and in the stationary source inspection program. The mobile source effort was almost fully funded in 1985 and the reduction in extramural resources for the stationary program can be attributed to the Agency's emphasis on conducting inspections with EPA employees rather than by contract. The shift from contractor inspections is due, in part, to court rulings limiting the use of contractors for inspection purposes.

In the Water program, the reduction to the Research and Development portion of the water quality program occurs primarily in the municipal wastewater engineering program. However, municipal wastewater research is increased from 1984 reflecting new initiatives in the areas of treatment plant compliance and the reduction of toxics in wastewater, as well as additional support for water quality regulations and standards.

Regarding the water quality abatement and control area, all programs increase from the 1984 FTE levels with the exception of

Effluent Guidelines where the original OMB request was less than the 1984 level. Approximately 73 percent of the funds reduced from the original OMB request occur in two programs, Water Quality Management and Clean Lakes. In the water quality management program, the President's Budget does not fund our original request for a nonpoint source implementation program at the Federal level; adequate funds are available for effective oversight of States' use of Section 106 and 205(j) funds for this purpose. This is consistent with the Agency's position that nonpoint source programs can be managed and implemented most effectively at the State level. The reductions in the Clean Lakes program are sufficient to continue phasing out existing restoration projects.

In other areas such as monitoring, standards and regulations, ocean disposal, dredge and fill, and municipal waste treatment, the President's Budget, while not equal to the original request, provides adequate resources for the Agency to carry out priority activities such as the National Dioxin Study, technical assistance for biomonitoring, development of sludge and marine criteria, wetlands protection and management of construction projects by the Army Corps of Engineers.

In the Great Lakes program, no funds are provided for open lake monitoring, the air deposition network, or continuation of the connecting channel study.

The President's Budget does provide an additional $5.8 million for the Cheaspeake Bay Program over the original request. These funds will support operation of the National program office, cost-sharing grants to demonstrate various methods on controlling non-point source pollution, and demonstration projects on nutrient and toxics control.

The President's Budget fully funds the original request for permit issuance in the Regions. These resources will allow the Agency to eliminate the backlog of major NPDES permits in unapproved States by the end of FY 1985.

In the water quality enforcement program, the President's Budget will provide for a smaller initiative to take enforcement actions that support the beginning of a National Municipal Policy to encourage POTW compliance. The proposed 1985 levels are, however, adequate to implement the policy at this stage of its development.

In the Drinking Water program, the reduction to the Research and Development portion of the drinking water program occurs primarily in the areas of health effects and engineering research. Resources that would have been utilized to accelerate current research on disinfectant by-products and corrosion in water distribution systems are not funded because this research will be sufficiently maintained at the base level. In addition, resources will be increased for health and monitoring over 1984.

The reduction in the Abatement and Control portion of the Drinking Water program occurs primarily in the area of State grants: in the Public Water Supply Supervision (PWS) and the Underground Injection Control (UIC) Programs and the Special

Studies and Demonstration Grant, which has traditionally supported the National Rural Water Association. The 1985 President's Budget maintains PWS and UIC at 1984 levels. In addition, States have the ability to raise revenues, for example, through permit fees. The Rural Water Association is encouraged to seek self-sufficiency. Other reductions primarily related to personnel costs ($1.7 million) are for additional work beyond that already funded in the base.

In the area of drinking water enforcement, the reduction occurs in the area of permit issuance for the Underground Injection Control program in non-primacy States. The President's Budget does include an increase of 5 FTE over the FY 1984 levels which will support the first full year of implementing this program.

STATEMENT OF SENATOR JENNINGS RANDOLPH

Mr. Chairman. I appreciate this opportunity to share my thoughts with the Subcommittee on the Environmental Protection Agency budget for the coming fiscal year.

The Chairman of the Environment and Public Works Committee has prepared an overview of the Committee's rationale for recommending funding above that requested in the President's budget. I would only add to his comments in observing that this recommendation is really the amount needed for EPA to meet mandated tasks.

Our Committee recommendation to the Budget Committee is based on the proposal originally prepared by Agency Administrator William Ruckelshaus last fall. The President pledged the availability of adequate resources to Mr. Ruckelshaus when he appointed him to EPA. Congress shares responsibility for seeing that this commitment is honored.

Secondly, EPA will be administering new programs if initiatives contained in pending legislation are enacted. In the very near future the Senate will consider amendments to the Clean Water Act and the Solid Waste Disposal Act reported by the Environment and Public Works Committee last year. If adopted, these measures and additional amendments to be considered by the Senate will advance protection of public health and the environment. Such legislation is meaningless if EPA is unable to properly administer new programs.

An issue of particular concern to me is the proposed school asbestos measure. There are few programs that have more bearing on a prevalent and well recognized public health threat. Yet, a program has existed for several years at the Department of Education which has never been funded. Interested parties agree that EPA is technically better suited to administer such a program. A pending amendment proposes moving authority for the asbestos program to EPA. It is essential that funds are available for EPA to carry out this activity.

A second program that has suffered in the absence of resources is the non-hazardous waste program established under Subtitle D of the Solid Waste Disposal Act. In recent years, EPA has concentrated staff and resources exclusively on management of the hazardous waste program. States have channeled limited resources to this effort as well.

There is a public misconception based on well publicized incidences that toxic and hazardous waste concerns have little to do with municipal landfills and dumps. These facilities are assumed to be receiving wastes that are benign and therefore do not represent a major health and environmental threat. Quite the opposite is true. Half of the original Superfund priority sites involved municipal landfills and dumps. Sanitary landfills receive subtantial amounts of hazardous materials through legitimate and illegal disposal practices. Tighter restrictions under the hazardous waste program will not stop these practices.

The Association of State and Territorial Solid Waste Management Officials with assistance from EPA performed a national survey of solid waste management. Preliminary results based on 43 reporting States portray a less than satisfactory situation.

In response to questions about the effects of reduced Federal funding under Subtitle D, The following was reported:

-- 26 States consider their solid waste programs to be active;

-- 17 do not classify their programs as active;

-- activities that have been most frequently curtailed include field inspections, technical assistance and enforcement;

-- 32 States have reduced their solid waste personnel by a total of 212 positions.

Of the 43 reporting States, only seven have completed an inventory of open dumps, 32 would do so if resources were available, six have no plans for completing the inventory. This requirement was enacted eight years ago, yet the majority of States do not have accurate information on the number, location, and condition of these facilities on which to judge the threat to health and the environment.

A key provision of the Solid Waste Disposal Act calls for development of State solid waste management plans. To date, only 18 of reporting States have approved plans, 17 are in various stages of review, and eight are far from completion.

If this situation is not corrected, demands on the Superfund program will continue to burgeon. There is no economy in providing funds for costly cleanup efforts without actively pursuing preventive measures.

S. 757, the Solid Waste Disposal Act amendments, directs EPA to develop criteria for monitoring and upgrading sanitary landfills and open dumps to prevent further contamination incidences. States are required to institute programs to assure compliance with the revised criteria. This proposal adds an important component to the existing program. To be effective however, States need to complete the preliminary work set forth by the open dump inventory and the establishment of solid waste management plans.

It is my intention to offer an amendment to authorize funding for these programs when the Solid Waste Disposal Act amendments are considered by the Senate. I hope that the Subcommittee will give earnest attention to this matter in preparing an appropriations measure for the coming fiscal year.

Last summer Members of the Committee on Environment and Public Works wrote to Administrator Ruckelshaus to request assistance in estimating the costs associated with the Subtitle D proposed amendment and completion of existing programs. The Administrator responded with a total estimate of between $672 million and $712 million. This amount seems staggering until compared with similar appropriations for clean up efforts under Superfund. Furthermore, this estimate does not take into account State contributions or the number of years needed to accomplish the objectives I have outlined. The detailed breakdown of costs associated with the solid waste program may be of use to the Subcommittee in assessing total Federal needs for the program.

A final point extends to other EPA programs as well. The Committee budget recommendation provides for modest increases to all State grant programs. A continued and consistent Federal commitment to States is necessary to provide for effective implementation of environmental laws.

I appreciate this opportunity to express my concerns regarding appropriations for EPA.

STATEMENT OF SENATOR MAX BAUCUS

Mr. Chairman. Thank you for this opportunity to comment on the Environmental Protection Agency (EPA) and Council on Environmental Quality (CEQ) budgets for the coming fiscal year. As ranking minority Member of the Toxic Substances and Environmental Oversight Subcommittee I have a number of concerns about funding for key environmental programs.

I have one general observation to make regarding development of EPA and CEQ budgets and regulatory policies. I am concerned that the Office of Management and Budget (OMB) is overstepping its bounds in dictating policies and selectively cutting budget requests to implement them. A thorough examination of the EPA and CEQ budget submissions to OMB and the passbacks, raises some serious questions about who is calling the shots for Federal environmental policy. In the case of CEQ, a restricted budget has seriously impaired the effectiveness and ability of the Council to meet mandated tasks under the National Environmental Policy Act and the Environmental Quality Improvement Act. Many new initiatives attempted by EPA have been met by resistance and intervention on the part of OMB.

The Environment and Public Works Committee agreed to recommend funding for EPA at the level requested by Administrator Ruckelshaus in the budget prepared last fall for submission to OMB. I urge Members of the Subcommittee to consider fully appropriating this amount in the HUD and Independent Agencies Appropriation for FY85. Two areas of particular concern to me are the Toxics and Research and Development programs.

The Toxics program mandated by the Toxic Substances Control Act of 1976 is just now gaining some momentum. Full funding is critical to support reviews of new and existing chemicals, and to enable EPA to address emerging areas such as developing protocals to evaluate biotechnology. A recent National Academy of Sciences report underscores the need to support a vigorous toxics program. The following was stated in the report.

> ...It is the chemicals in commerce that have the smallest amount of information relevant to human exposure in the workplace and in the general environment. This is of particular concern, inasmuch as the primary motivation for testing chemicals in commerce is their potential for environmental and occupational exposure.
>
> *Toxicity Testing*
> *Strategies to Determine Needs and Priorities*
> National Academy Press
> Washington, D. C. 1984

The toxics program has recourse to several statutory authorities to stimulate chemical testing. Adequate funding and personnel however, is central to the Agency's ability to effectively carry out this task.

Another area of concern is the Research and Development program. As has been the case in the previous two years the Science Advisory Board was extremely critical of the *Research Outlook 1984*. This Congressionally mandated, annually updated document is intended to be a five year plan of EPA's research and development priorities. It is the Science Advisory Board's role to critique this document and forward comments to the Administrator. This year's comments included the following statement.

> ...research planning within ORD is driven by the budget process rather than being used to guide development of a budget. While it is naive to assume that strategic research planning will be driven solely by the research needs of emerging environmental issues, it is even more naive to assume that a viable and effective research plan can be developed and action taken when driven only by the budget and its limitations.

This criticism highlights two of my concerns. First, in recent years, policy shifts and budget reductions have wreaked havoc in the Research and Development program. As a Member of the authorizing Committee for this legislation, I intend to support a multi-year authorization to provide some stability and guidance to this program. Stable funding, however, is also needed to provide continuity.

Secondly, diminished resources and priority changes have prevented EPA from embarking on initiatives that require immediate attention, and pursuing anticipatory research activities. In Montana and in many other States, research characterizing wood smoke emissions is greatly needed. The pollution problem already exists and has caused a widespread public health concern. Some States and localities are regulating wood stoves with little technical and scientific support. Since States generally look to the Federal government for research and technical assistance this void needs to be filled.

A related research gap concerns indoor air quality. The vigorous energy conservation movement of the early 1970's that made wood stoves a popular alternative also prompted an agressive commercial and residential building insulation effort. We suspect that captive emissions may be a problem, but the dimension and scope is largely unknown. These are but two examples of research initiatives EPA should pursue.

Finally, I will comment on funding for CEQ. As a matter of policy, this Administration has assigned a different role to the Council than had previously been the case. The Council has been stripped of many environmental policy functions it formerly performed. The statutory mandates under the National Environmental Policy Act however, remain. If the Council is to carry out these tasks, $700,000 as requested by the President is insufficient. In addition to the $480,000 requested for support to the Council under the Environmental Quality Improvement Act, there is a standing annual authorization for $1 million under the National Environmental Policy Act. I urge the Subcommittee to consider an appropriation that more realistically addresses the needs and important responsibilities performed by CEQ than is represented by the level in the President's budget.

Thank you again for this opportunity to comment on funding for environmental programs.

Statement of Senator Howell Heflin

Mr. Chairman, I would like to go on record today as giving my wholehearted and enthusiastic support to the Administration's budget request for funding construction of a new laboratory building to house the Eastern Environmental Radiation Facility (EERF) in Montgomery, Alabama.

Mr. Chairman, the Eastern Environmental Radiation Facility is the principal laboratory and field facility of the Environmental Protection Agency (EPA), office of Radiation Programs. With a current staff of 45 employees, the Facility comprises over one-third of the Office of Radiation Programs (ORP). Activities of the laboratory are fully integrated into the current and long-term plans for carrying out the Environmental Protection Agency's mandated role in protecting public health and the environment from radiation.

Mr. Chairman, because the facility is principally housed in a number of obsolete wood frame buildings over 40 years old requiring extensive maintenance, there is a need for a replacement structure suitable for this operation. Day-to-day activities include high-hazard laboratory work involving flammable solvents and chemicals deemed inappropriate in the existing construction. Safety inspections by recognized authorities have concluded that these buildings constitute a fire risk, not only to the occupants but to the radiation-related equipment essential to the EPA radiation programs. In addition, the buildings are also subject to periodic flooding due to their location in a flood plain. A loss from fire or flood would cripple the radiation program and severely impair its operations until a new building and equipment was obtained. Because the potential for fire or flood loss cannot be averted, it is imperative that acquisition of a suitably designed and constructed building take place as soon as possible.

Mr. Chairman, the agency has thoroughly examined the possibilities of other facilities in Montgomery and other locations, and has concluded that there is no suitable existing facility elsewhere. Construction of a new facility elsewhere or modification of an existing facility, would cost more and result in damaging loss of professional staff.

Mr. Chairman, the planned facility construction would be on land provided at no cost to EPA by Gunter Air Force Base in Montgomery. The agency would

ENTER INTO A TENANT RELATIONSHIP THAT WOULD BE BENEFICIAL TO EPA AND TO THE AIR FORCE.

MR. CHAIRMAN, THIS MULTIPURPOSE FIELD LABORATORY HAS THE CAPABILITY TO DESIGN AND CONDUCT FULL-SCALE FIELD INVESTIGATIONS OF RADIOACTIVE SOURCES. ITS RADIO-CHEMICAL ANALYTICAL CAPABILITY IS INTERNATIONALLY KNOWN AND IS SOUGHT BY OTHER FEDERAL AGENCIES AS A REFEREE IN QUALITY ASSURANCE/QUALITY CONTROL OPERATIONS. THE FACILITY ALSO HAS AN ENVIRONMENTAL ANALYSIS CAPACITY USING ITS OWN STAFF AND COMPUTER, AS WELL AS THE LARGER AGENCY-OWNED COMPUTERS. THESE FUNCTIONAL COMPONENTS ARE INTEGRATED INTO THE EPA RADIATION PROGRAM OPERATIONS IN ALL FOUR OF ITS AREAS OF RESPONSIBILITY.

1. SUPPORT TO STANDARDS-SETTING ACTIVITIES. USING ITS ABILITY TO DESIGN AND PERFORM FIELD STUDIES AND PERFORM ANALYTICAL RISK ANALYSIS, EERF IS A PRINCIPAL INSTRUMENT IN ASSISTING EPA HEADQUARTERS IN ITS PRIMARY RESPONSIBILITY FOR SETTING ENVIRONMENTAL PROTECTION STANDARDS. THIS INCLUDES IDENTIFYING SOURCES OF RADIOACTIVE EMISSIONS FROM DIFFERENT TYPES OF FACILITIES AND CALCULATION OF RADIATION DOSE AND RISKS DUE TO ENVIRONMENTAL TRANSPORT. FOR EXAMPLE, MANY OF THE ANALYSES IN SUPPORT OF THE HIGH-LEVEL AND LOW-LEVEL RADIOACTIVE WASTE STANDARDS WERE PERFORMED AT EERF. THE URANIUM MINE REPORT TO CONGRESS, MANDATED BY THE URANIUM MILL TAILINGS RADIATION CONTROL ACT, IS A PRODUCT OF EERF'S ENVIRONMENTAL ASSESSMENT CAPABILITY. THE FACILITY ALSO PLAYS A KEY PART IN IMPLEMENTING EXISTING STANDARDS, SUCH AS DRINKING WATER, FOR WHICH EPA HAS THE ENFORCEMENT RESPONSIBILITIES.

2. ENVIRONMENTAL SURVEILLANCE AND MONITORING. THE ENVIRONMENTAL RADIATION AMBIENT MONITORING SYSTEM (ERAMS), WHICH IS THE ONLY NATIONAL NETWORK FOR MEASURING ENVIRONMENTAL RADIATION LEVELS, IS MANAGED BY EERF. WITH MONITORING STATIONS IN EVERY STATE, EERF COLLECTS AND ANALYSES, ON A REGULAR BASIS, AIR AND PRECIPITATION SAMPLES, AS WELL AS SELECTED DRINKING WATER AND MILK SAMPLES. THE ERAMS HAS BEEN UPDATED AND STREAMLINED SINCE THE TIME IT WAS ORIGINATED, TO MEASURE ENVIRONMENTAL RADIATION THAT MIGHT BE ATTRIBUTABLE TO ATMOSPHERIC TESTING OF NUCLEAR WEAPONS. FOR EXAMPLE, IT CAN RAPIDLY DETECT ANY RESULTING ELEVATED LEVELS OF RADIATION. THE ERAMS HAS BEEN VERY EFFECTIVE IN THE ASSESSMENT OF THE IMPACT TO PUBLIC HEALTH AND FALLOUT FROM CHINESE TESTS OF NUCLEAR DEVICES IN THE ATMOSPHERE. THE DATA ARE REPORTED QUARTERLY AND USED AS A NATIONAL INDICATOR OF TRENDS IN BACKGROUND RADIATION BY MANY ORGANIZATIONS.

The EERF conducts field surveillance around many types of nuclear facilites at the request of other Federal and State agencies. A novel ongoing monitoring operation at EERF is the radiochemical analyses of seafood taken in the marketplace survey in Boston, Atlantic City, and San Francisco at Congressional request. The purpose of this monitoring operation is to confirm that elevated radioactivity levels have not resulted from past ocean disposal of radioactive wastes in the 1960's.

3. Emergency Preparedness and Response. As part of the Agency's responsibilities for radiological emergency planning and preparedness, under coordination by the Federal Emergency Management Agency, the facility maintains a fully-equipped, highly-mobile emergency response capability which can be deployed immediately to the site of a radiation emergency. The emergency response teams are comprised of trained professionals whose normal work at the Facility and in field studies makes them particularly capable of providing expert monitoring assistance during emergencies. Using air-transportable monitoring vans, which have been outfitted to be almost completely self-sufficient, and with excellent cooperation of the U. S. Air Force Reserve unit stationed at Maxwell Air Force Base, upon approval, the EERF team can take field measurements of radiation levels in the area of an accident anywhere in the United States within a matter of hours after modification.

4. Technical Assistance/Quality Assurance. Laboratory analysis and field measurements of radiation levels are provided to State radiation protection organizations and local governments to assist in determining the significance of a problem and actions that may be needed. This support is also provided routinely to Headquarters and Regional components. Finally, because of its reputation for thoroughness and accuracy, EERF is asked to participate as a referee in quality control analyses for radioactivity by national and international organizations.

Mr. Chairman, I have attempted to give the Committee a concise justification of the need for the new EERF facility and the valuable and essential functions carried out there. I urge the Committee to give its favorable consideration to the Administration's request.

Thank you.

Senator DOMENICI. Again, I apologize for keeping you waiting because of my being late. I think you are aware the chairman of the subcommittee, Senator Garn, is pleased that our joint effort aimed at assuring the timely pass through of Superfund money to HHS was successful, as you indicated. He has indicated to me that I should tell you that he is going to recommend that same language in the FY 1985 bill.

Senator STAFFORD. We are very pleased to hear that, Mr. Chairman.

Senator DOMENICI. With reference to your concerns about EPA's budget request, you can be assured that this subcommittee is going to carefully review your recommendations, your toxic substance evaluation, and EPA's enforcement activities. This subcommittee has continuing concern and certainly will be addressing those concerns as they proceed through their deliberations.

Might I just take 1 minute, even though we are late, to talk with you about the level of funding that you addressed a concern about in terms of the budget resolution and/or the statutory freeze proposed on the floor.

I understand your concern with a literal interpretation of a freeze on the line items that are directed at the subject matter of today's hearing, but there is no such proposal in terms of this committee, nor on the floor, that literally every account be frozen. To the contrary, if the numbers are looked at, what we are attempting to put a cap on is a level of budget authority that is cumulative for all functions of government, except 050, that is defense, and 150, foreign assistance, including military. All the rest have one number.

I understand some Senators would think that they would have a better chance of getting more appropriated for line items if they added a line item to a cap by saying the cap is $137 billion. We want to add $400 million and, therefore, EPA will get funded higher than somebody presently contemplates.

I merely want to tell you we will have to do it over and over again on the floor. I don't think such an add-on assures you will get more money. And I don't think it is necessary in each case in order to assure that more money is received. But we will talk about that in more detail.

This Appropriations Committee distributes the entire budget authority in a cross-walk manner to the subcommittees for their work, and for various reasons I am confident that this subcommittee is going to get more to spend in EPA than they had last year in that process. Housing is down rather than up. That is usually a very large amount of budget authority, and nobody is saying, because it is down, you cut the entire budget authority for the Government. Quite the contrary, it is staying there.

Actually, there is a misconception in terms of entitlements. None of the entitlements that are appropriated are frozen in either the budget resolution or the cap. They go up automatically according to the entitlement increase.

So I would like to work with you with that in mind in the next 2 or 3 days as we proceed, not in this committee but on the floor. It does have some relavancy to this subcommittee's work.

Thank you for your patience.

Senator STAFFORD. Thank you very much, Mr. Chairman, and for the encouraging statements you made. We will be pleased to work with you.

Senator DOMENICI. Thank you very much.

STATEMENT OF EBEN CHESEBROUGH, PRESIDENT, NORTH AMERICAN LAKE MANAGEMENT SOCIETY

Senator DOMENICI. Mr. Chesebrough, president of the North American Lake Management Society. We have a statement, as I understand it.

Mr. CHESEBROUGH. Thank you, Mr. Chairman.

Senator DOMENICI. We are going to make your statement a part of the record at the close of your oral remarks.

You may proceed. If you could abbreviate the statement, it will permit more time for some questions and discussion.

SUMMARY OF STATEMENT

Mr. CHESEBROUGH. Thank you, Mr. Chairman.

Mr. Chairman and members of this distinguished subcommittee, my name is Eben Chesebrough, president of the North American Lake Management Society. I am also here before you to represent the Commonwealth of Massachusetts Department of Environmental Quality Engineering in respect to this testimony.

We are concerned about the poor water quality in our Nation's lakes and appear before you to support EPA's clean lakes program, section 314 of the Clean Water Act. In this regard, I wish to relate to you results of a recent national survey of lake pollution problems.

In 1971, the University of Wisconsin conducted a national survey of lake quality problems. Based upon 40 responding States, the survey indicated that 394 problem lakes existed; 300 lakes had algae and weed problems; 7 had toxic contamination.

In 1983, NALMS conducted a similar national survey of lake quality problems. Based upon 38 responding States, this survey showed that more than 10 times more problem lakes existed, 40 times more, or 12,000 lakes, had algae and weed problems; 120 lakes had toxic contamination. Wisconsin, Massachusetts, Minnesota, Florida, Louisiana, and California lead the list with problem lakes.

The clean lakes program is not just a study program, but a comprehensive implementation program. Over 87 percent of the program funds has been devoted to implementation and 7 percent to diagnostic feasibility studies.

The clean lakes program is a high-yield, low-cost program with an excellent track record in getting local, State, and Federal interests to cooperate in an efficient, cost-effective, problem-solving program.

The program is voluntary and projects are initiated at the local or State level. The matching grant requirement of the program ensures local/State participation and a commitment to successful projects.

In terms of fiscal responsibility and cost effectiveness, the clean lakes program is tough to beat. An EPA audit of the program showed for every Federal dollar spent, $8 in benefits were returned to the public.

The 1983 NALMS State lake survey indicated nonpoint pollution and lake restoration needs. The clean lakes program partnership must be maintained to allow the State capabilities to be built. Over 80 percent of the responding States believe there is a real chance if Federal guidance continues for about 5 years. Continuation of the Federal clean lakes program is critical to this process. There must be a strong Federal program to focus attention and demonstrate to the States that our polluted lakes can be restored. Time is of the essence. The longer Congress waits, the greater the expense will be. Restoration of polluted lakes is certainly more expensive than preservation of clean lakes. It makes good sense, both economically and environmentally, to maintain and preserve those lakes that are clean now than to wait and pay the high cost of restoration later.

RECOMMENDATIONS

We wish to make the following recommendations to this subcommittee:

First, we recommend no less than $15 million be appropriated for the section 314 clean lakes program. Both phase I studies and phase II implementation projects should be eligible for funding.

Second, EPA should reestablish a clean lakes program staff in EPA headquarters and the regional offices to effectively administer the program, provide technical assistance, and assure that funds are spent in a cost-effective manner.

Third, EPA should be mandated to complete the lake restoration procedures guidance manual. This partially completed manual would prove invaluable to States in guiding their efforts to improve lake quality. We recommend that an additional $5 million be appropriated under section 104(h) for this project.

I should also add at this time, that we recognize and sincerely applaud your recent efforts to see that this manual becomes a reality.

Fourth, a remedial liming program should be established under the acid rain control program to restore biological integrity to acidified watersheds. This should be a demonstration program to perfect methods and procedures and monitor environmental impacts of lime in lakes.

We recommend this program be conducted through existing mechanisms of the clean lakes program. We strongly believe, however, that liming lakes and watersheds should not replace the original focus or intent of the clean lakes program, but should complement it.

Fifth, we recommend a national program to control nonpoint sources be implemented to mitigate economic damage caused by the pollution to restore designated uses to protect water quality for future generations and preserve our valuable water resources.

We support targeted appropriations under sections 106 and 205(g) for State implementation of programs to control nonpoint pollution. NALMS supports full appropriations for the Oberstar amendment to the Clean Water Act—H.R. 4037.

Finally, we recommend Congress ask for a report from EPA on the status of lake quality in this Nation. This report should allow Congress and the American people to understand the magnitude of the economic and ecological problem currently existing in our lakes and ponds. Congress should ask for this report within 1 year of reauthorization and should provide $1 million under 304(j) for this purpose.

In closing, Mr. Chairman, the North American Lake Management Society wishes to take this opportunity to thank you and your subcommittee for the past support of the clean lakes program. The future water quality of our lakes depends upon your support and we encourage you to maintain this position in 1985. Thank you, Mr. Chairman and members of the subcommittee.

Senator DOMENICI. Thank you very much. Your testimony on the status of our lakes in the United States is very significant, persuasive.

The chairman of the subcommittee asked that I reiterate some of the recent developments. You have alluded to a few of them. EPA has made a commitment, as you probably know, to the subcommittee that the manual on lake restoration that you recommended would be finished by December 1986.

The committee has, just last week, approved the use of $4.1 million for the first phase of the national lake survey. Finally, the administration, for the first time in several years, is requesting some funding for the clean lakes program. It is not enough; $2.5 million is far from the $15 to $30 million that you recommend, but the chairman clearly is going to recommend an increase in that program.

PREPARED STATEMENT

I don't think we are prepared to set a number at this point, but we thank you for your testimony. Unless you have some further comment, your entire statement will be made a part of the record, and we appreciate your testimony.

Mr. CHESEBROUGH. Thank you, Mr. Chairman.

[The statement follows:]

STATEMENT OF EBEN CHESEBROUGH, PRESIDENT, NORTH AMERICAN LAKE MANAGEMENT SOCIETY

Mr. Chairman and Members of the Subcommittee:

My name is Eben Chesebrough and I am president of the North American Lake Management Society, a national organization made up of citizens, scientists, lake associations, and water pollution control professionals who are concerned about poor water quality in our Nation's lakes. The Society has testified before this subcommittee the last three years to support EPA's Clean Lakes Program, authorized by section 314 of the Clean Water Act. This year we are here not only to provide support for the program but also to relate the results of a recent National survey of lake pollution problems and to apprise you that the country is losing the battle to save its lake resources. The lack of progress in protecting and restoring lakes is a direct result of severe budget reductions in the Clean Lakes program over the past three years. This is the only Federal program that can be used to stop this tragedy. Our lakes mean billions of dollars to the economy, but we are losing them because of the demise of the spirited local/State/Federal partnership that was the hallmark of the Clean Lakes Program.

WHAT IS NEEDED?

The Congress is not getting the information needed to make necessary decisions on appropriations concerning polluted lakes. Groups that traditionally represent States' views on pollution control emphasize continued funds for construction grants. Wildlife groups concentrate on estuaries and trout streams. Even EPA is not telling Congress how bad lake pollution is. In EPA's Water Quality Report to Congress, submitted in February 1984, there was not one section devoted to lake pollution control or restoration needs. EPA has greatly downplayed the magnitude of damage caused by nonpoint sources to lake quality. EPA has even taken appropriations ($1 million) earmarked under section 104(h) for a handbook on effectiveness of lake restoration measures and is using the funding for liming of acidified waters in upper New York. The NALMS State Lake Quality Survey shows that the national extent of lake quality damage is enormous and that the States are virtually helpless to reverse the damage without EPA help.

Every year that Congress delays in resolving lake pollution problems, the situation gets worse and the price tag for restoration and protection goes up. This delay in cleanup means that we are bankrupting our children and their children; they inherit not clean lakes and water supply reservoirs but dirty ones - along with huge costs for lake pollution abatement, treatment, and cleanup. The Congress is accountable to the American public for ensuring safe drinking water in reservoirs and clean recreational lakes. This Subcommittee must accept the call to reverse the loss of our economically vital lake resources. The public and the economy demand it. NALMS recommends:

- Appropriations of $15-30 million annually for 5 years for EPA's Clean Lakes Program to allow States time to develop their own self-supporting State Clean Lakes Programs.

- Targeted appropriations under section 106 and 205(g) for State implementation of programs to control nonpoint pollution where needed to protect lake quality.

- A report to Congress from EPA on the status and trend of lake quality, nationally. The nature and extent of pollution loading from point and nonpoint sources and resulting lake use impairment should be defined.

OUR LAKES ARE BEING LOST

This Subcommittee is aware that the lakes and impoundments of this Nation are vital not only for their ecological functions in supporting fish and wildlife but also for the economic basis--measured in the billions of dollars--to many local, state and national businesses. Unfortunately, our Nation is losing the battle to keep its lakes clean and the damage may be irreversible in many cases because of the high cost of cleanup. In 1971, the University of Wisconsin used a questionnaire to survey the extent of lake quality problems in the United States. Based on 40 responding States, 394 problem lakes were identified. More than 300 lakes were reported to have excessive algal growth or nuisance weeds and 7 lakes were noted to have toxics contamination.

In early June 1983, NALMS sent a questionnaire about lake quality problems to each State water pollution control administrator. Thirty-eight States responded with a grim assessment of what has happened to the quality of our lakes and impoundments. More than 10 times more problem lakes were found in 1983 than in 1971 and 40 times more lakes--12,000--were reported by the States to be suffering from nuisance growths of weeds and algae. More than 4,200 lakes were identified with impaired use that adversely affects more than 4 million acres of lakes and impoundments. The NALMS survey found that we are also losing the battle against toxic substances. From 7 contaminated lakes 10 years ago, the 38 responding States now have 120 lakes contaminated with toxics. For example, the State of Utah reported that over 50% of publicly owned lakes are contaminated with toxics. More than 9,000 lakes were reported to be experiencing excessive nutrient loading. Wisconsin, Massachusetts, Minnesota, Florida, Louisisana, and California lead the way with many impaired lakes. Lake Apopka in Florida and Ocean Lake in Wyoming have pea soup algae blooms because of massive nutrient loads from agricultural activities. In addition to nutrients, agricultural activities are filling Moon Lake and Wolf Lake in Mississippi, Reelfoot Lake in Tennesse, and Union Grove Lake in Iowa with sediment.

There is also direct evidence that some lakes have been poisoned by toxic materials and organic chemicals. The problem ranges from PCBs in Lake Pine Bluff, Arkansas, Fort Loudoun Lake, Tennessee, and Woods Pond, Massachusetts to mercury in High Rock Lake, North Carolina, and arsenic in Muskego Lake, Wisconsin as well as chemical contamination in Alycon Lake in New Jersey and in the Great Lakes. The damage that is occurring is staggering and action needs to be taken now before more lakes are lost. Now we hear of fish cancer epidemics caused by toxic substances. The cancers have been found in waters draining to lakes in Ohio and New York. Nearly every Sauger and Walleye in Torch Lake, Michigan has tumors. Not only must loadings of toxics be eliminated by contaminated sediments but biota must be restored. These fish are telling us something that we have been ignoring.

THE CLEAN LAKES PROGRAM

In our testimony before you last year, we described the beginning of the Clean Lakes Program in 1975 as a controversial demonstration program and how it struggled to fruition in 1980 with publication of regulations. We described how it focused on implementing lake restoration and lake protection practices rather than just studying problems. Over 87 percent of the total funding has been devoted to implementation, while 7 percent was spent on diagnostic-feasibility surveys. The program is a high-yield, low cost water quality improvement program that has been effective in getting local, State, and Federal interests to cooperate in solving specific water quality problems. The program is voluntary and must be initiated by local or State interest. The 50-50 matching grant nature of implementation projects ensures active participation by requiring local and/or State investment in the project. An EPA audit of the costs and benefits of the Clean Lakes Program found it to be one of the more cost-effective government programs in existence. For every dollar expended by the Federal government, eight dollars in benefits were returned to the public. The restoration of urban lakes was most beneficial with $9.64 of benefits in return for every dollar spent. In rural lakes the benefits were still $6.19 for every dollar spent.

STRONG CONGRESSIONAL INITIATIVE IS REQUIRED

The 1983 NALMS State Lake Survey clearly shows that the States cannot single-handedly address nonpoint pollution and lake protection/restoration needs. They don't have the personnel, expertise, or authority to get the job done. It must be done in partnership with EPA so the State capabilities can be built. The majority of responding States indicated that they need Federal help in building effective State programs. Over 80 percent of the responding States believe that there is a better than even chance that they can establish self-sufficient programs if meaningful levels of Federal assistance and technical guidance were provided for about 5 years. The State staff and the public cannot effectively convey their concern to the Congress. The public thinks that the State is handling the situation and State staff concerns about lake pollution are not reflected by traditional organizations representing the States and their priorities regarding construction grants funds. The public and State agency staffs are speaking through NALMS for clean water.

For FY 1980, $20 million in appropriations were made available for the State/Federal partnership in cleaning up lakes. The last few years, Congress has reduced those appropriations by 90%. Already, progressive States that developed their own programs and capabilities in response to EPA's Clean Lakes Program have been adversely affected by the mixed signals sent by Congress and EPA the last three years. With State budget crises and the prospect that the Clean Lakes Program would be eliminated, many States have eliminated positions dealing with lake restoration and management. Only a very vocal outcry by citizens in Maine saved a scaled down program. A similar effort to save the Wisconsin Lakes Program has failed. Other States such as California, Iowa, Oklahoma, Arkansas, and North Dakota that were in the process of developing State programs have now backed away. If this Congress is at all concerned about water quality in our Nation's polluted lakes, it must act now. Restoration activity needed in lakes such a Porter Lake (Massachusetts), Lake Buhlow (Louisiana), Big Lake (Michigan), Phalen Lake (Minnesota), and Lake Wallenpaupack (Pennsylvania) will be delayed and will cost much more for future generations to address, if they are able to do it at all.

During the 1983 NALMS Survey, the States indicated 68 Phase I projects would be completed and would need $33.6 million in FY 1984 funding to satisfy the Phase II funding requests. Only 5 million were appropriated for 1984. The States also estimated that $10.5 million was needed in Federal funds to conduct 147 Phase I projects for FY 1984. Two hundred and thirteen projects requiring $44 million were projected as needs for FY 1985 and 230 projects requiring $62 million were projected for FY 1986. These are very conservative estimates for lake restoration needs because some States could not estimate what would be needed and others indicated that no requests would be made because uncertainty about funding in the Federal program had a ripple effect on State programs. For Phase II projects in FY 1985, almost half the responding States could not provide estimates and for FY 1986, fully two-thirds could not estimate their needs.

This conservative needs assessment ($150 million over the next three years) for just those States that responded shows that lake restoration is expensive and that the longer the country waits, the more costly it will be and lake resources may likely become irretrievably impaired and lost. The needs assessment also suggests the magnitude of lake quality problems on a national basis. The Phase II needs for FY 1984 ($33.6 million) would result in restoration of only 68 lakes. This represents less than 1.5 percent of the estimated 4188 lakes with impaired use reported in this survey. Two-thirds of the States indicated the section 314 Clean Lakes Program helped restore lake quality in their lakes. A common reason given by those States that indicated it did not help was that State and local matching funds for restoration were not readily available, so Phase II implementation was not able to proceed.

Interest and public pressure for clean water and clean lakes has not diminished. However, the quality of publicly owned lakes in the United States is in jeopardy. The seriousness of the problem is recognized by the States but they clearly cannot handle it alone. They need substantial Federal guidance and financial assistance. The extent and magnitude of the problem appears no less today than in earlier years. In fact, toxics pollution to these water bodies is now being elevated by States as another facet to the complex problem. The States have overwhelmingly indicated that they are willing to work over the course of the next five years to develop programs to handle this serious issue. Nonpoint pollution is indicated as the single most critical problem to the quality of lakes, and some States indicate the Best Management Practices are appropriate and effective when administered comprehensively in controlling nonpoint sources in a cost/beneficial manner.

NALMS RECOMMENDATIONS

Lakes are essential features of the earth's surface both for the ecological functions they perform as well as the human uses they provide. Whether they are naturally or artificially formed, these water bodies provide critical habitat and nurturing areas for a variety of fish and wildlife; they perform vital hydrologic functions to assist in balancing surface and subsurface water flows; they serve as catchments for water to be used for numerous industrial and human consumption; and they provide vast opportunities for recreational activities. As long as lakes demonstrate good quality characteristics, all of these uses can be provided. The Clean Lakes Program is essential if the Nation is to preserve its rich lake heritage.

Section 314 Clean Lakes Program-

For the past two years, the Society recommended that this subcommittee appropriate $15 million a year for five years for the EPA Clean Lakes Program. Survey results indicated approximately $45 million in funds were projected for both FY 1984 and FY 1985. This year, we recommend appropriations between $15 and 30 million for both Phase I diagnostic studies and Phase II implementation studies. EPA should reestablish a small staff (five people in EPA headquarters and one in each EPA regional office) to administer the program, provide enhanced technical and programmatic assistance to the States, and assure the funding is spent in a cost-effective manner. A five-year commitment of this order by EPA will be effective in putting in place an effective, long-lasting program to protect and, where necessary, to improve our essential lake resources. Without such a commitment and involvement by EPA and the Federal government at this time, this Nation now stands a good chance of placing a significant percentage of its lake resources at serious risk and losing their essential ecological and human values.

Lake Restoration Guidance Manual-

EPA's Office of Research and Development has spent almost three million dollars on an evaluation of the effectiveness of lake quality improvement techniques. A guidance manual was to be developed based on this evaluation from funding appropriated under section 104(h) of the Clean Water Act. The project was never completed and we believe it is essential to guide future State and local efforts to improve lake quality. The Society recommends that $5 million be appropriated for section 104(h) to complete the lake restoration procedures guidance manual by 1988.

Liming Demonstration-

A remedial liming program should be established in conjunction with the initial phase of the acid rain control program to restore biological integrity to acidified watersheds and to prevent further degradation of threatened resources. NALMS recognizes that many uncertainties exist in the liming of watersheds and lakes and recommends an inital five-year demonstration program to perfect environmentally acceptable techniques for liming watersheds, streams, and lakes. A selective liming program should be established to be implemented by the States as part of the existing mechanisms established through the EPA Clean Lakes Program. However, NALMS strongly believes that the Clean Lakes Program should continue to focus on restoring and protecting lakes from excessive nutrient loading, toxics, weeds, and sedimentation. The liming program should not replace this focus but should complement it. The Society recommends $2.5 million be appropriated annually for demonstration projects.

Targeted Nonpoint Source Controls-

A national program to control nonpoint sources is deperately needed to mitigate economic damage caused by the pollution, to restore designated uses, to protect water quality for future generations, and to preserve valuable land and water resources. Because of nonpoint source pollution, human lives are being lost, lakes are being destroyed, public drinking water supplies are being threatened, and massive social costs are being borne by the public. NALMS supports targeted appropriations under section 106 or 205(g) for State implementation of programs to control nonpoint pollution where needed to protect lake quality. If enacted, NALMS supports full appropriations for Mr. Oberstar's H.R. 4037 to address the Nation's critical nonpoint source pollution problems.

Lake Quality Report to Congress-

We also recommend that the Congress ask for a report from EPA on the status of lake quality in the United States. The report should be sufficient to allow Congress and the American public to understand the magnitude of the pollution loading to our freshwater lakes, how this loading has changed over the past 10 years, and the consequences of such pollution both economically and ecologically to our fragile lake resources. The Congress should ask for this report within one year of reauthorization and should provide a separate appropriation for it under 304(j) of the Act. We recommend that the appropriation for this report be $1 million.

Summary

Our Nation's lakes have suffered terribly from pollution and over 4000 have impaired uses--many more are now deteriorating. Over the past decade, the problem as identified by States has grown by 10 fold, and action on the part of Congress is urgently needed. While rivers can recover from past pollution by flushing pollutants downstream, lakes accumulate these pollutants and continue to have problems after the pollution source is controlled. We often forget that restoration and protection of good lake quality means jobs and income to millions of people in this country. Americans clearly want and deserve clean lakes and reservoirs for safe drinking water, recreation, industrial use, and aesthetic enjoyment. More than half of our Nation's population lives within five miles of a publicly owned lake! The North American Lake Management Society urges this subcommittee to provide modest level appropriations for the section 314 program, for section 104(h) research investigations, for an acid rain demonstration program, for a targeted nonpoint source program, and for evaluating the status and trends in pollution of our Nation's lakes and lake restoration protection needs.

STATEMENT OF DEBORAH HORTON, DIRECTOR, UTAH QUALITY ASSOCIATION, ON BEHALF OF THE NATIONAL ENVIRONMENTAL TRAINING ASSOCIATION

Senator DOMENICI. Mrs. Deborah Horton, director of the Utah Quality Association, on behalf of the National Environmental Training Association. Welcome.

Mrs. HORTON. Thank you. I appreciate this opportunity to give testimony for both the National Environmental Training Association and Utah Technical College at Provo, Utah.

I have with me Andrew Holtan.

Senator DOMENICI. Before you testify, let me indicate we have your prepared remarks. As you know, they will be made a part of the record following your oral presentation.

I do want to indicate to you Senator Garn wanted his regrets expressed specifically to you and those that you represent. He was unable to be here this morning. That is just one of those unfortunate things. He asked me to come in his stead, so I extend those regrets to you.

Mrs. HORTON. I appreciate that. He does owe me one now, however. As a beginning to the testimony, I would like to give you an idea of what is going on in the field now that we have been funded for 2 years under section 104(g) of Public Law 92-500. That money, as the committee requested, was used in most States for in-plant operator training at the local level, and in Utah, we have been using the funding from those 2 years to train on-site, in-plant the operators of the waste water facilities.

Although the projects are not complete, we do have some preliminary findings which I think will hold up in the final evaluation this summer.

Foremost, we are finding that we are improving effluent quality at some of the treatment plants. The key to that is you have to pick a plant that is not hydraulic overloaded. That is hard to do in Utah. We are making a difference and effluent quality is improving.

Second, we are maximizing operations which is saving money at the local levels in chemicals and sludge handling, and that kind of thing.

We are also seeing that plant life and equipment life will be extended due to improved maintenance of the equipment in the long run. For the first time, some of the fellows are starting to keep adequate records.

We are finding in some cases we are going to see the degradation of the NPES monitoring reports because they haven't been filling them out right. They knew they could only have so many milligrams per liter of BOD so that is the number they put on the report regardless of what the lab test said, and this is through ignorance. These things are being improved, but the numbers do not look so good.

In addition, one plant we worked with in Utah this year started a safety program with our 104 instructor. They never had a safety program previously and were doing some very dangerous things, but ended up winning the State safety program award for wastewater treatment plants this year.

Finally, the operators are still being certified. It is still a voluntary program in Utah, but we are finding as we send an instructor in and find out how the plant can run, they become concerned that it run right, and they become concerned they learn what they have to know to do their job right. It gives them a sense of professionalism.

We feel these findings justify the program, and I know that there are some States that are getting better results than Utah.

So I think we are headed in a positive direction as far as improvement of water quality at the local level.

We do appreciate the support we have had from this committee and the Congress and EPA, but we are seeing—and this is a change of tone for me a little bit—that there are going to be some advantages to finding these programs self-sufficient funded at the State and local levels. At least for Utah, we feel that if they are self-sufficient and funded by the State and local governments, that we will have a better communication system among the regulatory agencies, the trainers, and the municipalities. This increased communication should improve compliance in the enforcement activities of the State.

We also see that we could set our goals and be consistently met. We find in the past years that for a while, the things that were being funded were primarily the production of booklets and materials for a time, and then it was train the trainers, and now it is in-plant programs.

As these goals change at the national level they would skew our own goals at the local level. We also realistically feel the Federal money is not going to be there for environmental training forever, and it is wise of us, I feel, to start on our own way toward self-sufficiency at this point so when the money ends, we are ready for it, and we will have other funding to continue the program.

Senator DOMENICI. Why do you feel you can get self-sufficient now when you couldn't before?

Mrs. HORTON. Because now with this program in place it is becoming more important to the State that there is training available; it is more important to the municipalities, and it has had some visibility so we can get local support from the voters.

Senator DOMENICI. Don't you think we should have pushed a little sooner at the national level for some preparation for these enormous expenditures in terms of management? We found all across the country what you are describing is the case 2 years ago that is true. A great deal of facilities were built with Federal money and part locally, but we didn't have a cadre of people to run them.

Shouldn't we have pushed that more diligently up here, or do you think it was predominantly the responsibility of local government?

Mrs. HORTON. At the time, that was during the trend that I was describing, how the trends have changed, and several years ago, the trend was to get training materials out to the operators and then rely on State governments to get the training to them.

It was being done, but not in an organized manner. I agree, we could use some support and direction at an earlier time. That really played right into my hands because the three things I would like to see from this committee is a plan, a national plan, on how we are going to meet the training needs in the field and how we are going to do that with milestones. That way we have got a good plan we can all follow in whichever way our States can follow it, finally end up with a goal that is set. Right now, we don't have that.

Second, we do need interim funding for section 104(g) of 92-500 primarily to keep the momentum going and staff in place. If we lose that staff, then we have to start over again.

We need the interim funding until self-sufficiency can be reached.

Finally, and to me almost most importantly, we need a mandate in the Clean Water Act for training. The National Environmental Training Association's motto this year has been "Training is not an option." And that is true, training is not an option. I would like to see that mandated in the Clean Water Act for some sort of training requirement for the plant operators.

I appreciate your attention, and I appreciate the past support we have had.

Senator DOMENICI. Did you have something you wanted to add, sir?

Mr. HORTON. No, but to express my appreciation for the continued support of this committee. If there was anybody leading the concerns about training, it was, in fact, this committee that kept it alive.

Senator DOMENICI. This subcommittee provided the additional $9.3 million over the last 3 years for the programs. The chairman indicates he feels confident that support is going to be here to continue these programs in accordance with the recently prepared national training plan.

We very much appreciate your bringing the committee current on how things are going. Obviously, this is an important area. It is not a lot of dollars, but it is one of those areas that frequently causes the American people to have less and less confidence in us when they find these very modern facilities built and not run right; they wonder whether we can do anything right up here. It is kind of foolish to spend so many millions and not have some kind of plan for training and certification.

PREPARED STATEMENT

We appreciate your statement and your statement will be made a part of the record.

Mr. HORTON. Thank you very much.

Senator DOMENICI. You're welcome.

[The statement follows:]

STATEMENT OF DEBORAH HORTON, DIRECTOR, UTAH QUALITY ASSOCIATION, ON BEHALF OF THE NATIONAL ENVIRONMENTAL TRAINING ASSOCIATION

INTRODUCTION

This testimony is presented on behalf of the members of the National Environmental Training Association (NETA) regarding the need for a national commitment to the development of a competent environmental workforce. This testimony outlines why a national commitment to environmental training is needed; summarizes the current status of training capabilities (including an overview of what has been accomplished with previous Federal appropriations); and presents recommendations for program direction and future appropriations.

NETA is a not-for-profit association of professional environmental trainers, supported primarily by member dues and services. An environmental trainer is a vocational instructor in the environmental field or a "troubleshooter" who provides technical assistance in the operation and maintenance of water and wastewater treatment plants (as well as other types of environmental facilities and systems).

Environmental trainers may be employed by community colleges, universities, state training centers or local/state/federal government, as well as by consulting firms, industry and other private sector firms.

NETA's membership encompasses all sectors of environmental training; however, this testimony focuses on training needs in water quality control and wastewater treatment. The urgent need for training exists as well in the other environmental fields (air and noise pollution, solid waste, drinking water, and toxic/hazardous wastes).

A NATIONAL COMMITMENT TO ENVIRONMENTAL TRAINING

Our nation faces a tremendous challenge for the 1980s. National polls and surveys consistently show widespread support among Americans for environmental protection goals. Yet, our society must also search for effective solutions to many other pressing problems, including unemployment, a national deficit, care for our elderly, and a troubled educational system. Our nation's fiscal resources must be fairly balanced, therefore, among these and other challenges.

Public Investment in Wastewater Treatment Facilities

Over several decades, our nation has invested tremendous Federal, State and local resources in the construction of wastewater treatment facilities. The Federal share alone amounts to more than $37 billion and is growing. The U.S. Environmental Protection Agency 1982 Needs Survey estimates that the backlog of current construction needs for wastewater treatment and interceptor sewers will cost an additional $35.4 billion. The projected total for existing facilities, to accommodate growth to the year 2000, will total $57.3 billion.

Clearly, we have invested and will contintue to invest tremendous financial resources in the construction of water quality control facilities. In contrast, our investment in training to develop competent workers to operate and maintain these facilities has been negligible: only two-tenths of one percent (.2%) of the amount spent for construction of facilities has been spent for wastewater operator training. This dismal statistic is even more startling when we consider that in Lesser Developed Countries, 1.5% of wastewater facility construction costs is spent for training.

Despite the huge public investment in wastewater treatment facilities, many facilities are not operating efficiently. A 1983 study by the U.S. Government Accounting Office found that 86% of the publicly-owned treatment plants were in non-compliance with their NPDES discharge permits at least once during the 18-month study; 38% of the publicly-owned treatment plants studied were found in serious violation of their permit limitations. (GAO/RCED-84-53, "Wastewater Dischargers Are Not Complying with EPA Pollution Control Permits".)

Future Federal Support to Local Communities

Of equal concern are the ramifications of serious long-term operational deficiencies and neglect — a grave situation that now approaches crisis proportions. Most local governments are apathetic to their responsibilities for effective operations and maintenance (O&M), because until recently the Federal government has heavily financed treatment plant construction, renovation and replacement — capital expenditures often necessitated by poor operation, maintenance and financial management of the treatment facility. Poor financial management of the treatment facility is widespread among small communities, with local user fee systems grossly inadequate to support actual costs of effective operation, maintenance and management.

Since many local governments perceive the State and Federal governments as a ready source of continual financial assistance, there has been little incentive to optimize plant operations and maintenance. This lack of awareness by local government is evidenced in the grim statistics on compliance of publicly-owned treatment works — especially small facilities.

As the Federal government now reduces fiscal support for construction, local governments are awakening to the true costs of poor O&M, especially its long-term impact on the capital investment. The scenario we see developing is: (1) many treatment facilities are not meeting their discharge permit requirements; (2) many plants suffer from poor operation and maintenance, resulting in the need for extensive construction, renovation, and replacement; and (3) small communities generally have totally inadequate financial management systems for wastewater plants, and local government is not prepared to assume financial responsibility for effective operations, maintenance and management. In short, the Federal government may find itself pressed hard to "bail out" local government by financing extensive renovation, repairs and reconstruction — the costs for which may equal or exceed the billions already invested to date.

While the situation is serious, it is not hopeless. What is needed is an increased focus on people rather than systems — an increased emphasis on operations, maintenance and management rather than construction.

Through training, the goal of adequate environmental protection can be better balanced with other equally desirable goals because training improves productivity and cost-effective treatment plant operations. Training also helps to maximize the beneficial impacts of the dollars spent on environmental controls because a competent staff: improves compliance and reduces enforcement costs; reduces chemical, electrical and other operating costs; and prolongs the life of equipment through proper operation and maintenance.

National Municipal Policy

U.S. EPA's National Municipal Policy, adopted January 1984, has significant implications for wastewater operator training. The Policy requires that, by July 1, 1988, all publicly-owned treatment works meet compliance requirements, whether or not they receive Federal funds. U.S. EPA, the states and municipalities must make sure that operator training plays an integral role in the plans developed for achieving compliance, since operator training is effective in improving plant performance, reducing operating costs and prolonging the life of equipment and facilities through better operation and maintenance.

STATUS OF STATE TRAINING CAPABILITIES

Congress has recognized the need for a national commitment to environmental training and has demonstrated its commitment by providing FY82, FY83 and FY84 "add-on" funds for training in budget appropriations for the U.S. Environmental Protection Agency.

As administered by EPA, these appropriations have enabled significant advances to be made in wastewater training and technical assistance. The appropriations have been and are being used to develop state wastewater training capabilities that will ultimately be self-sustaining and "self-sufficient".

State Self-Sufficiency for Wastewater Operator Training

While the concept of "self-sufficiency" for environmental training has been discussed informally for many years, the issue has been seriously addressed only recently. The self-sufficiency concept has been subject to widely different interpretations, and U.S. EPA, the States, and the training profession are now moving toward developing a uniform definition and understanding of self-sufficiency. As used in this Testimony, the term "state self-sufficiency for operator training" means that:

- state training capabilities must be programmatically sound, meeting minimum requirements and incorporating the "elements of good training capabilities" now being identified
- ultimately, local funding sources should be used in supporting state wastewater training capabilities
- in the interim, however, States may use both direct and indirect Federal support to establish a strong base of long-term, non-Federal support

One concept being considered as a potential tool for state training self-sufficiency is a proposal to mandate wastewater operator training as a requirement under P.L. 92-500. A similar training mandate has proven successful under the Resource Conservation and Recovery Act (RCRA). A wastewater training requirement would be subject to a demonstration of programmatic self-sufficiency and might include:

- that an established percentage of construction grants must be allocated for operator training. This would assure effective operation and maintenance after the consulting engineer has demonstrated operability and completed the construction project.
- that a facility's operating budget must include operator training and an established percentage of a facility's user fee revenues should be allocated to operator training.

These and other innovative ideas are being examined as tools to generate support for training. However, the first step toward self-sufficiency is a clear understanding of what it is. In a recent national study, NETA has found that many state agencies, local agencies and training organizations are not aware of their responsibility for wastewater training self-sufficiency; many organizations, in fact, cannot even begin to define self-sufficiency. Further discussion of and recommendations concerning wastewater training self-sufficiency appear on page 10 of this Testimony.

FY82 Funding: Technical Assistance at Small, Non-Complying Facilities

In FY82, Congress provided "add-on" funds in EPA's budget in the amount of $4.1 million for wastewater operator training and technical assistance aimed at improving municipal wastewater treatment facility compliance. These FY82 funds were used primarily to help thirty-five states conduct technical assistance demonstration projects at small publicly-owned treatment plants that were not in compliance with their discharge permits. Most of these projects will not be completed until September 1984 or later. However, preliminary indications are that the technical assistance provided through these projects has been highly-effective (see case histories on page 7 of this Testimony).

One of the reasons why these technical assistance demonstration projects are proving so successful is that this funding, for the most part, is being administered through state training agencies and organizations that have a history of commitment to wastewater training. This commitment assures quality control, cost-effectiveness and success. Furthermore, these projects are helping state regulatory agencies strengthen their relationships with training organizations, such as state training centers and community colleges. These projects, therefore, are providing a solid foundation upon which strong working relationships can be maintained for the future.

FY83 Funding: Expanded Technical Assistance, Evaluation and a National Training Plan

For FY83, Congress provided add-on funds for wastewater operator training in the amount of $2.625 million. These funds were used to continue technical assistance at small treatment facilities and to expand technical assistance efforts by providing financial management assistance. In addition, thirteen more states were involved in FY83 projects than were involved in FY82. FY83 funds were also used to evaluate the effectiveness of training and technical assistance projects funded under FY82 and FY83 appropriations. Congress also requested U.S. EPA to submit a national training plan that identifies critical, common program elements of effective state training programs and associated costs and to evaluate the status of state training capabilities.

The draft national training plan (submitted to Congress on March 1, 1984) represents a critical first step towards the national commitment to environmental training. The national plan articulates wastewater training issues in the context of Federal, State and local roles; furthermore, the plan enables Congress, U.S. EPA, state regulatory agencies and the training profession to work together as partners in addressing environmental workforce needs. In the draft national training plan, U.S. EPA has established a sound framework for the workforce development partners to continue to define, refine and address training issues.

FY84 Funding: Expanded Technical Assistance, Training Program Development and Self-Sufficiency

Congressional add-on appropriations for FY84 amount to $2.625 million. U.S. EPA is now completing allocation of FY84 funding, which will be used: (1) to continue technical assistance efforts at small POTWs; (2) and to assist statewide operator training program development, financial management technical assistance and progress toward state self-sufficiency. While FY82 and FY83 add-on funds were allocated to obtain maximum state participation, FY84 funds will be allocated more selectively, targeted to help those states that have demonstrated a commitment to the training and technical assistance effort.

Case Histories of Training Successes

Through the technical assistance demonstration projects conducted with Federal support under FY82 and FY83 appropriations, documentation is being gathered on the effectiveness of training and on-site technical assistance. Although most of these demonstration projects will not be completed until September 1984 or later, preliminary results indicate that training and and on-site technical assistance is highly effective in improving plant performance and in bringing problem treatment plants into compliance. The case histories given below illustrate the role of training in optimizing plant performance/compliance:

Arizona - This project, conducted by Pima Community College in Tucson, faced serious obstacles to the project's success:

- The state regulatory agency had literally "given up" on the plants selected for the project.
- The plants are located on Indian Reservations, where there is a serious lack of cooperation between the local authorities and the state government.

- The plants selected for the project were understaffed, lacked vital equipment and sometimes were in need of plant revisions.

Despite these problems, the technical assistance and training provided through this project brought three of the five plants into compliance and at a fourth plant, effluent parameters were greatly improved.

Connecticut - This project, conducted by the State Department of Environmental Protection, also faced serious obstacles to the project's success:

- the plants selected for the project have design deficiencies
- the impact of industrial waste had to be minimized
- the plants are confronted with hydraulic overloading

Despite these obstacles, training and technical assistance brought three of the five plants into compliance, and effluent parameters were greatly improved at the fourth and fifth plants.

The following case histories illustrate the role of training in preventing plant performance problems, rather than correcting problems:

Oregon - None of the plants involved in Oregon's technical assistance project were in "non-compliant" status. Oregon's project, conducted by Linn-Benton Community College, is focusing, therefore, on optimized plant performance, rather than compliance. The following benefits have been achieved so far:

- trained operators in proper laboratory procedures and recordkeeping and reporting requirements
- trained operators in process control techniques
- established math training program for three operators with serious math deficiencies

Utah - This project, conducted by Utah Technical College at Provo, faced unusual conditions in that all plants have design deficiencies and many plans needed new or repaired equipment and also lacked sufficient funding, staffing and maintenance. Nevertheless, the following benefits have been achieved to date:

- helped operators improve plant operations, trained operators in math, and started on-site laboratory testing
- helped operators to become certified
- cleaned and repaired equipment, and ordered new equipment
- established recordkeeping system and explained reporting requirements
- provided study material to operators
- recommended alternative operational methods and necessary equipment purchases

In summary, these case histories are outstanding examples of the effectiveness of training and technical assistance.

PROGRAM RECOMMENDATIONS

The National Environmental Training Association supports fiscal responsibility and state self-sufficiency for environmental training capabilities. However, an abrupt and complete elimination of all Federal support would result in the near-abolishment of training in most states. An orderly transition period is necessary to enable states to prepare for this enormous responsibility and to develop individual state strategies which will gradually reduce Federal assistance and increase local funding over a discrete period of time, ultimately resulting in state training capabilities that are primarily self-sustaining and programmatically sound.

We are now in this transition period and the National Environmental Training Association recommends that the following actions and activities be undertaken and supported by Federal appropriations:

Establish a Training Function at U.S. EPA Headquarters and Each U.S. EPA Region

Within the U.S. EPA Office of Water, a focal point must be established for the training function and resources must be provided for staff positions to plan, direct, and provide overview and training grant management. With clearly-defined staff responsibilities for training, the effectiveness and efficiency of wastewater training and technical assistance activities can be maximized.

Continue On-Site Technical Assistance and Fiscal Management Assistance

The technical assistance projects begun under FY82 and FY83 appropriations are filling critical training needs at small facilities -- especially those facilities not in compliance with their discharge permits. As administered by U.S. EPA, this use of Federal funds is establishing the seeds of state self-directed and self-sufficient technical assistance outreach programs. These efforts are already bearing fruit and should be continued and expanded through FY85 funding under Section 104(g)(1) of P.L. 92-500.

Assist in Development of Individual Training Plans of Action

If state self-sufficiency lies at the heart of effective, self-supporting training capabilities, then the first step toward such self-sufficiency must be for states to develop their own training plans of action -- plans that are fiscally and programmatically self-sufficient. It is not enough, however, for the Federal government to provide only financial assistance; guidance, direction and technical assistance must also be provided so that state self-sufficiency can be approached effectively.

A multi-year technical assistance effort should be undertaken, therefore, to help states develop and implement state training action plans.

Increase Section 106 Funding to Help States Implement Training Plans of Action

The development and implementation of state training plans will require a significant investment of human, material and financial resources. Federal support should be provided, under Section 106 of P.L. 92-500, to help states develop and implement their training plans of action. It is recommended that 106 appropriations be increased by 10% in FY85 and that these added monies be used exclusively to support the multi-year development and implementation of state training plans. This Federal support will represent interim financial assistance toward the ultimate goal of self-sufficiency. Tentatively, a time-frame is envisioned as follows:

- 23 states will use FY85 and future 106 appropriations to achieve self-sufficiency by 1990
- the remaining 27 states will use future Section 106 appropriations to achieve self-sufficiency by 1993

Establish Task Force to Address Need for Increased Public Education/Awareness

While most Americans strongly support the concept of environmental protection, the average citizen does not associate this concern with the vital need for effective water and wastewater treatment plant operations. This lack of awareness means that the general public does not appreciate the huge public investment in treatment facilities or recognize the true costs and benefits of effective operation and maintenance.

In conjunction with EPA's final report to Congress on operator training, a vigorous public education campaign should be launched to increase public awareness of the commitment required for effective environmental protection. Specifically, the general public must understand that:

- a wastewater treatment plant is a large public investment that must be protected and maintained
- for small communities, annual plant operating costs are probably the largest single item in a community's annual budget
- trained workers can increase plant performance and compliance, and can reduce plant operating costs through better operation and maintenance practices
- the community must provide adequate financial support to properly staff, operate and maintain the treatment plant

NETA recommends that a Task Force be established to examine the need for increased public education/awareness and to make program recommendations. The

Task Force should include representatives from all of the workforce development partners.

FISCAL RECOMMENDATIONS

U.S. EPA's National Training Plan and NETA's program recommendations outlined above present significant challenges for wastewater operator training. These challenges require a national commitment backed by financial support. The National Environmental Training Association recommends the following Federal appropriation levels to support the wastewater operator training goals recommended herein:

P.L. 92-500

Section	Amount	Purpose
104(g)(1)	$5,000,000	(1) to continue on-site training and technical assistance and financial management assistance; (2) to support development of state training plans of action
106	For FY85, a 10% increase over current level of total Section 106 appropriations	These added monies will be used exclusively to assist states in quickly achieving the goal of the training plans of action: fiscal and programmatic self-sufficiency

In addition, NETA recommends that Congress authorize additional Federal appropriations to support: (1) the establishment of a training function with the U.S. EPA Office of Water; and (2) the establishment of a task force to address the need for increased public education/awareness.

The National Environmental Training Association appreciates this opportunity to provide Testimony on behalf of the environmental training profession.

STATEMENT OF ROBERT HILBERT, GENERAL MANAGER, SALT LAKE CO., UTAH WATER CONSERVATION DISTRICT, ON BEHALF OF AMERICAN WATER WORKS ASSOCIATION RESEARCH FOUNDATION

Senator DOMENICI. Now we have Mr. Hilbert, general manager of the Salt Lake Co., Utah Water Conservation District, on behalf of AWWA Research Foundation.

Mr. HILBERT. Good morning, Mr. Chairman.

Senator DOMENICI. I guess you understand that Senator Garn could not be here. Again, he expresses his regrets. I am sure you are aware of his interest in this area. Please proceed.

INTRODUCTION OF ASSOCIATES

Mr. HILBERT. I am Robert Hilbert, general manager of the Salt Lake County Water Conservancy District, and also, Mr. Chairman, of the State of Utah's Safe Drinking Water Committee. I am a past president of the American Water Works Association, and today I am spokesman of the American Water Works Association Research Foundation. With me at the witness table this morning are Mr. Leroy Hooten who is director of public utilities of Salt Lake City; three gentlemen from Long Island—Mr. Ralf Baker, Mr. Tim Whitesides, and Mr. Bill Shickler. They represent the Long Island Water Conference.

Also with me today is Mr. Jim Manwaring, who is the executive director of the American Water Works Association Research Foundation.

Our full statement is submitted and, hopefully, will be made a part of the record.

Mr. Chairman, I would just highlight a few points, and after that, I would like to ask Mr. Hooten and Mr. Baker to make a brief statement in support of our written testimony.

I want to thank the committee and Congress for the $1 million add-on to EPA's research and development budget last year. We appeared before the committee approximately a year ago seeking this $1 million aid for our program. The committee saw fit to put that in EPA's budget. We certainly thank the committee and Congress for this appropriation to support the industry research and drinking water.

I can report to you today that after many delays in working with EPA, we have finally concluded an agreement which covers the use of that $1 million from the Federal Government and the $1 million of seed money from the foundation, and that agreement was entered into on April 10, 1984. That agreement sets forth the terms and conditions on how the Federal moneys and the match moneys will be used for the various research projects related to drinking water throughout the Nation.

We, the foundation, have identified 15 specific research projects and agreed to by EPA. We are now requesting proposals for various contractors' utilities to see those research projects can get underway, and the information developed will be made available to the water works industry of the Nation. Those projects are waiting for the funding to come forward and completion of that. They will be on line within 2 months and completion over about a 1- and 2-year period.

We have come back to the committee today, Mr. Chairman, to seek an additional $1 million for fiscal year 1985. This $1 million, if added into EPA's budget, would be matched with the industry money of $1 million. So this would act as the seed money for our moneys to move ahead on additional research projects that have been identified by our staff in Denver.

I want to emphasize that this is only an assist to the research foundation's long-range plans. Last year was the first attempt in seeking Federal moneys. This would be the second year. It is hoped that in 3 or 4 years, the foundation or the industry can be self-sufficient, and we need the moneys from the Federal Government to act as the seed money or aid money to get us on our feet so that the association and the foundation can move forward on their own to fund the research in the future.

I would like to ask Mr. Hooten, if he will, to add a few remarks, and then Mr. Baker, and if Mr. Manwaring chooses to make a few comments, he can do so.

Senator DOMENICI. Before you do, Mr. Hooten, let me say we are going to make this entire statement a part of the record. I would like to ask you, in terms of financial self-sufficiency in light of the fact you are asking there be another $1 million in 1985 and then maybe even $1 million in 1986, testimony would indicate that some kind of a phaseout approach in that you would become self-sufficient with this being seed money and matching it as described. Do you have that self-sufficiency plan, and could you send it to the committee for incorporation in this record?

Mr. HILBERT. Yes, we have the plan, and Mr. Manwaring might indicate to you the success of that. We are very pleased the success we are having from the utilities across the country to support our research and development plan.

Mr. Manwaring.

Mr. MANWARING. We are now on a limited basis. We have a limited assessment program now. We hope to expand that in the future. That will be approved and ready for public disclosure after our June meeting with our board of directors.

So, yes, I will be able to send you that; a preliminary plan as well as approved plans.

Senator DOMENICI. All right.

Mr. Hooten, did you want to add something?

Mr. HOOTEN. Yes, I would like to point out I do support Mr. Hilbert's testimony, and sort of building on the point you made and Mr. Hilbert made, we want to emphasize that we want to make this program self-sufficient; that this is simply seed money; that the water works industry is anxious to take this program on and once the ball starts rolling, once the momentum is gained, we are confident the water works industry will fully support the research foundation and, hopefully, phase out the Federal Government. I believe this is the proper way to achieve the goal of researching programs that the water works industry badly needs.

Mr. BAKER. Mr. Chairman, we at the Long Island Water Conference would like to add our support in concurrence with Mr. Hilbert's statement. We believe the plan, as outlined, would be an excellent way to approach the question of adequate funding, water utility research and development, and the members of the conference are anxious to lend their support and cost share to the program.

Senator DOMENICI. Thank you very much.

Mr. HILBERT. Any other gentleman wish to make a brief comment?

Senator DOMENICI. Could I ask a question? In reference to a broader notion of research, is there any institute in the United States or this hemisphere, that you are aware of, that does basic engineering research on public works, the concept of engineering?

Mr. HILBERT. I am not acquainted with it.

Mr. Manwaring, you being a staff person of the foundation——

Mr. MANWARING. The American Public Works Association has a research foundation also, but they don't get involved in drinking water. The AWWA Research Foundation is the only one involved in drinking water research, nonregulatory oriented research.

Senator DOMENICI. I understand that. I am not trying to, in any way, negate the need for the specificity that you are speaking of. The question I have has to do with the notion of public works and engineering and broad research in that area. It seems to me engineering is on brand new cutting edges everywhere, but I don't see the same kind of work in public works. Maybe there is nothing to be done, but there appears to be nothing, and you are telling me there isn't, other than foundations, that direct their attention at problems from time to time; is that about right?

Mr. MANWARING. That's correct.

PREPARED STATEMENT

Senator DOMENICI. Thank you very much. Your statement will be made a part of the record at this point in the hearing record.

Mr. HILBERT. Thank you for your time, Mr. Chairman.

Senator DOMENICI. You are welcome.

[The statement follows:]

STATEMENT OF ROBERT HILBERT, GENERAL MANAGER, SALT LAKE COUNTY WATER CONSERVANCY DISTRICT, ON BEHALF OF THE AMERICAN WATER WORKS ASSOCIATION RESEARCH FOUNDATION

Mr. Chairman, I am Robert Hilbert, General Manager of the Salt Lake County Water Conservancy District and Chairman of the State of Utah's Safe Drinking Water Committee. I am a past-president of the American Water Works Association and I am here today as spokesman for the AWWA Research Foundation. With me are Mr. Leroy Hooten, Director of Public Water Supplies in Salt Lake City; Mr. Foster Burba, President of the Louisville Water Company, Chairman of AWWA's Water Utility Council, and the incoming Treasurer of the Research Foundation; Mr. Ralph Baker of Lynbrook, NY, who is Chairman of the Long Island Water Conference; and Mr. James F. Manwaring, Executive Director of the AWWA Research Foundation.

This is the second year that the American Water Works Association Research Foundation has appeared before this Committee. Last year AWWARF appeared for the purpose of expressing its concern over drastic reductions in EPA's drinking water Research and Development budget and in the Agency's subsequent retreat into narrow regulation-oriented research. In response to those concerns, AWWARF brought a proposal before Congress for a new cooperative, cost-sharing partnership between the water utilities industry and EPA in support of drinking water Research and Development.

In return for $1 million in Congressional seed money, the water utilities industry promised to provide $1 million in matching funds. It also proposed an administrative mechanism to be set up between EPA and the water utilities industry to determine research needs and select projects. The perceived benefits would be a doubling of the federal investment and a more practical focus for drinking water Research and Development.

From April through June, AWWARF's constituent water utility managers from every section of the country worked with key Congressmen and Senators in presenting this plan. The Appropriations Committee and the full Congress were receptive and provided $1 million to aid the water utilities industry in drinking water research. President Reagan signed the bill into law on July 12, 1983. Seven days later AWWARF representatives were in Washington for meetings at the White House and with EPA officials. The task at hand was working with the water utilities industry and with EPA to develop a mutually satisfactory cooperative agreement to put the add-on to work.

In October, 1983 the EPA comptroller determined that the Congressional add-on could go only to AWWARF. That same month, AWWARF Trustees meeting in Denver finalized a proposal for a jointly administered AWWARF/EPA funding agreement. This was then submitted to EPA where it entered a review and administrative process which was completed just a month ago and signed by both parties.

In the 11 months since the appropriations bill was enacted the AWWA Research Foundation has worked diligently with the water supply industry and EPA to ensure that the intent of the Committee was implemented. Inside EPA, most of the eight months since our official submittal of the cooperative agreement application was consumed by the administrative and procedural requirements of the Agency's grants program.

However, the Research Foundation has proceeded independently, without federal funding or an official agreement, to implement the program as described to the Committee last year. The Foundation designed a cooperative relationship that included the water utility industry and EPA in all aspects of developing and managing a joint research program. The Foundation surveyed the entire industry to define the most pressing water supply problems in need of research and then refined these issues into a research agenda through a two-stage endorsement and review process. The Foundation then took the initiative, at its own expense, of presenting this agenda to EPA. A consensus was reached on specific 15 projects to be funded under this cooperative arrangement (Attachment #1). The Research

Foundation then invested a great deal of time and expense in the development of requests-for-proposals (RFPs) for these 15 projects and in announcing their availability to potential contractors. At this point, the Foundation is prepared to evaluate all of the proposals submitted for these projects and to select the best qualified contractor by mid-June.

The purpose in pointing this out is to indicate that the water supply industry, through the Research Foundation, has proceeded at break-neck pace to satisfy our explicit and implicit commitments to Congress in response to the add-on.

In one sense the 14 months that will have elapsed between the first Congressional contacts in April of 1983 to the selection and funding of projects and the disbursement of the $1 million add-on is a considerable period of time. Yet in another sense it is remarkably short for all of the interim steps which have had to be taken. Seen in this light, these 14 months have been a period of sustained activity and accomplishment on the part of the water utilities industry. The crowning achievement has been the creation of an administrative vehicle whereby water utilities and EPA can jointly define, research, and hopefully solve some of the most pressing problems affecting our nation's drinking water.

All of this was made possible by the interest and support shown by the Congress in FY 84. Now for FY 85, AWWARF's utility managers have returned to this Appropriations Subcommittee to request another add-on of $1 million. We are back in part because once again the EPA drinking water budget has been cut--overall by more than 7% and in some key categories, such as environmental engineering and technology, by 36% just from the last fiscal year to the present. We note from FY 82 through the proposed FY 85 budget, spending has been reduced for drinking water Research and Development by more than 40%.

These sorts of reductions virtually preclude practical water utility oriented R&D except through the joint AWWARF/EPA cooperative agreement which the $1 million add-on brought into existence. This is the reason that another $1 million add-on for FY 85 is needed and requested. AWWARF fully recognizes the critical issue of the deficit and will once again provide 100% matching funds for any add-on.

This brings us to perhaps the key issue. It must be stated for the record that these requested add-ons are seed money and not an attempt by the water utilities industry to build itself permanently into the appropriations process. The $1 million dollar add-on and the joint AWWARF/EPA funding agreement must be seen more as funding for a demonstration of what can be done rather than a long-term solution to industry research needs. The same must be said of the water utilities 100% match of the Congressional add-on. Although this is impressive, it must be seen as an interim step towards a more far-reaching solution to this problem.

The answer must lie in creating a self-imposed water utility assessment which would fund the R&D priorities of the water industry. This approach has been used with success in such diverse areas as natural gas, electricity, and numerous agricultural commodities. In Great Britain and the Netherlands the majority of drinking water R&D funding is provided by this means.

Over the past year, AWWARF, in cooperation with its member water utilities, has begun to address this issue and to study how the experience of other groups can be applied and transferred to the water utilities industry. We have been encouraged, both by what has been learned from the experience of others and from the initial response of leaders in the water industry. With budget deficits looming in the coming years, we realize that Congress will be hard-pressed to find adequate funding for EPA drinking water research. We believe that water industry funding of its own research priorities, in close cooperation and partnership with EPA, is the only real answer to the problem.

Our request for a $1 million add-on in FY 85 is made so that the joint AWWARF/EPA review and funding mechanism can continue in operation during this period. We do not anticipate appearing before this Committee more than three or four times at most. Our goal is to work with water utilities, the Congress, and with EPA to develop and authorize a long-term self-funding mechanism. It is only through this medium that adequate industry-supported R&D funding can be obtained.

During this interim period, the add-ons provided by the Congress are enabling AWWARF and EPA to demonstrate first-hand to the water supply industry the effectiveness of such a cooperative approach and the huge benefits to be gained by a centralized research organization. Perhaps most important of all is the fact that thousands of our American water utilities are beginning to see the value of coordinated cooperative research. We ask for the Committee's continued support during this interim 3 or 4 year period while AWWARF and the water utilities industry move towards self-funded R&D. Your continued support for a $1 million add-on in FY 85 will be an integral part of this process.

Attachment #2 shows some of the research areas that have been identified as important by the industry but which could not be funded by this initial cooperative effort.

Attachment #1

PROJECTS APPROVED UNDER EPA/AWWARF COOPERATIVE AGREEMENT

1. Unsolicited Proposals. The January issues of Research News, Mainstream and JAWWA carried an announcement that approximately $65,000 was available to support original research in 1984. This was increased to $100,000. Deadline for receipt of proposals is April 20, 1984. Immediately thereafter a Technical Proposal Review Committee (TPRC) will be appointed by the Chairman of the Research Division; Dr. Perry McCarty will serve as chairman and Dr. Marty Allen of the Foundation staff is the secretary. The TPRC will review the proposals, meet during the Annual Conference in Dallas, and make recommendations to the Foundation Board at its second meeting in Dallas.

2. WATERQUEST and Emerging Technologies. WATERQUEST will be expanded with the addition of one staff person. Increased effort to obtain more material for the database, more publicity and demonstrations, and concentration in specific areas such as water loss and control of leakage to provide information of interest and use to most utilities. Emerging Technologies will involve working with British and European research agencies to search out, document, and report on new technologies adopted by water utilities that can help others or are worthy of further research and development.

3. Springfield, Massachusetts Study. This will be a study dealing with corrosion and its effect on water quality. Specifics are being developed in meetings with the Springfield Water Department and others.

4. Water Quality Model, Lower Mississippi. The Sewerage and Water Board of New Orleans will help support this study. Using the lower Mississippi, a model having nationwide application, will be developed to assist water utilities in evaluating constituents in their source waters. Items to be taken into account include stream flows, point and nonpoint discharges and water quality. The purpose is to help the utility manager evaluate and design monitoring programs, treatment alternatives, etc.

5. Utah - Barriers to Acceptance of New Technologies. The purpose of this study is to identify barriers at the state level to the acceptance of new ideas and technologies for water treatment processes and operations and to recommend methods or ways to overcome these barriers.

6. Surrogate Organic Parameters. Over the past few years, EPA has funded a number of treatment and analytical studies generating considerable data on potential surrogate parameters and specific contaminants. This study will involve the analysis of this data and attempt to evaluate the relationships among or between the parameters. This could be a major step toward the goal of developing simple, inexpensive screening procedures for the detection of organic material in water.

7. Haloform Test Validation. This project will be the field testing of the newly developed laboratory analytical procedure to measure THM formation potential. The method was developed by Texas A&M under a Foundation grant.

8. Giardia Treatment. This is a combined laboratory and field (operating plants) study to investigate the effectiveness of various treatment and disinfection processes in the removal of Giardia lamblia. It is a follow-up of earlier work supported by the Foundation.

9. Preoxidant Ozone. This research in the use of ozone as a preoxidant in water treatment will involve pilot-scale effort to evaluate both the organic removal and the coagulation assistance of ozone addition in the initial stages of water treatment. Different types of water quality conditions will be evaluated.

10. THM/TOX Production. The purpose of this study is to obtain a better understanding of the production of a variety of halogenated organics from the use of halogens as disinfectants. The research will include evaluating the fate of nitrogenous organic compounds during disinfection, identification of the major groups of NOC present in source waters, evaluating disinfection efficiencies in the presence of NOC and determining whether such compounds can interfere with standard methods use to measure disinfection residuals.

11. Water Quality Deterioration. The objective of this study is to obtain a better understanding of how the physical causes of water quality deterioration (pitting, tubercule formation, slime collection on pipe walls, etc.) begin in the first place and to develop preventive or curative measures. Also, to evaluate the connection between water treatment and water quality deterioration and to identify finished-water characteristics which promote microbial regrowth and microbial-mediated corrosion.

12. Disposal of Sludges. The objectives of this project are to develop a state-of-the-art report on current alternatives for the treatment and disposal of sludges from water treatment plants and to identify and characterize those inorganic and radioactive wastes that might be considered hazardous. Emphasis is to be placed on the problems of small water systems.

13. Small System Technology. The intent of this project is to generate innovative approaches and techniques that can be investigated for their potential cost-effective solution to one or more of the common problems affecting the drinking water quality of the small community.

14. Fire Flow Criteria. This study calls for the review of existing fire flow criteria in light of new building codes, modern materials of construction, and improved fire-fighting equipment and procedures. If the results indicate changes in the criteria are in order, appropriate recommendations are to be made.

15. Additives Protocol. The objective of this study is to develop a suggested procedure for selecting the best chemical additives for improving filtration.

TIME SCHEDULE

A notice of the availability of grants for research in the general areas or specific projects as outlined herein appeared in the March issues of Mainstream, Research News and Water Research Quarterly. Interested parties were instructed to notify the Research Foundation by April 1 of their interest and requests for proposals will be sent to them. Proposals must be sent to the Foundation by May 15, 1984 to allow time for their review by the respective project advisory committees and selection of contractors when the committees meet during the AWWA Annual Conference in June. The goal is to award contracts and start work on the projects during July.

Attachment #2

POSSIBLE RESEARCH PROJECTS IN FY85

The AWWARF has underway an elaborate research planning process that involves widespread consultation of the industry, review and planning by a panel of authoritative professionals, and coordination with EPA and other research programs. The list below is not the result of that process; it is merely suggestive of the sort of research projects that are likely candidates for serious consideration. The list also confirms that AWWARF's focus is on the practical needs of water utilities nationally.

EMERGING TECHNOLOGIES. One of AWWARF's 1984 projects is the identification of technical and operational innovations in the water supply field in North America and Western Europe. This extensive survey, which involves leading research centers and authorities, will pinpoint a number of technologies and practices that merit further research because of their potential general application in the U.S. The project may also result in cooperative, cost-sharing projects with other countries. Ten or more research topics could easily result.

CORROSION. The Research Foundation's current corrosion project with the Engler-Bunte Institute in Germany will identify a set of research projects corresponding with the gaps in the current state of knowledge about corrosion causes, measurement, and control. An array of interrelated projects is expected to be recommended, aimed at the number one priority of the water industry: corrosion of material that decreases its economic life and leads to early decay and replacement.

SURROGATE ORGANIC PARAMETERS. The current study of experimental screening methods or indicators of organic contamination will result in a selection of analytical procedures requiring field testing in a variety of operational situations. It is a high priority of the industry to have an inexpensive, easy-to-use method of determining the presence of organic chemicals, rather than to use costly methods as a matter of routine for the identification and measurement of individual compounds.

ANALYTICAL METHODS. The most sophisticated analytical methods available today are able to identify only a fraction of the Total Organic Carbon present in drinking water. Since the known fraction is of concern, it seems prudent to identify the remaining compounds. Various other analytical needs have been identified, e.g., continuous monitoring of Chemical Oxygen Demand, electrochemical techniques, organic halogen measurement, etc.

RISK ANALYSIS. The present tools and approaches used to estimate the risk posed by drinking water contaminants are not satisfactory to the scientist or the interested citizen. Risk extrapolation models differ by several orders of magnitude in their (unverifiable) estimates of risk. Furthermore, present approaches allow no comparison of risks, costs, and benefits achieved. Sharply-focused research in this area could have substantial impact on regulatory action, public policy and economic impacts.

NITRATE. This is one of the most prevalant chemical water quality problems facing small utilities using a ground water source. Nitrate in drinking water is a health-related problem but its cost-effective removal is a technological difficulty that needs to be solved. Several laboratory techniques show promise but they are unproven in full-scale operation. A comprehensive research program is necessary.

ADSORPTION TECHNOLOGY. The use of granular activated carbon in drinking water treatment has received a great deal of attention by North American and European researchers in the past few years but there is still much to be learned regarding its practical limitations. For instance, the reactivation technology is still in its infancy as is the optimization techniques for full-scale application.

COST OF DRINKING WATER. There is presently much confusion on the actual cost of drinking water when comparisons are made between utilities in the U.S. and other parts of the world. Some standardized methodology should be developed and applied which indicates the true cost of operating various component parts of the system. This is critical in the planning for future expansion of water service.

WATER LOSS. It has been estimated that many communities lose up to 35 percent of their finished drinking water through leaks, unauthorized water use, malfunctioning meters, etc. Presently this is impossible to compute on a national basis because a standard technique for analysis does not exist. The project would first develop such a technique and then document and evaluate how water losses are controlled by some of the utilities.

FATE OF CONTAMINANTS IN GROUND WATER. The objective of the effort would be to determine the degradation and fate of contaminants in ground water as the water passes through the aquifer. The reduction in concentration is a result of adsorption, biological degradation, ion exchange and other phenomena.

NEW PROCESS EVALUATION. New or modified water treatment processes, primarily for removal of synthetic organics, are constantly being developed on the laboratory and/or pilot-plant scale. An aggressive research program is necessary to analyze the efficacy of the most promising of these new processes in a full-scale, operational facility.

ECONOMICS OF WATER CONSERVATION. Identification of all economic factors which bear on water conservation and development of a procedure to apply those factors on a site-specific basis. The study would provide a decision-making tool for determining the economic impact of water conservation on utility load factors, rates, future growth, etc.

WATER UTILITY FINANCING. A review of current financing methods and identification of innovative alternatives to: current practices in developing rate changes and fees; local cooperative financing methods and service contracts; capital financing vehicles including system development charges; and the concept of a water financing bank.

BIOLOGICAL DECONTAMINATION OF GROUND WATERS. Naturally-occurring and man-introduced bacteria may be useful in controlling certain kinds of chemical contamination of ground water, in situ or through pumping and recharge (as is practiced in Karlsruhe, West Germany). Research in this area could lead to major innovations and significant aid to small and large systems which depend upon contaminated aquifers as their primary source of supply.

TASTE AND ODOR IN DRINKING WATER. The Research Foundation funded the initiation of this project in 1982 and the research has resulted in significant gains in the identification and treatment of compounds that cause taste and odor in drinking water. This important study will be expanded to evaluate different types of water sources and different compounds of concern.

WATER RESOURCES PLANNING. The methodology for the planning of water resources utilization needs to be updated to take into account new developments in risk assessment as it applies to the management of the nation's water supply resources. This study would focus on new methodology that can be applied in the use of existing resources and planning for future needs.

REMOTE METER READING. This task is currently very labor-intensive and thus very costly to water utilities. Giant research strides have been made by the gas and electric utilities in remote meter reading practices which may eventually eliminate the individual meter reading practice. Additional research monies would allow the water industry to participate in the studies sponsored by the Electric Power Research Institute and the Gas Research Institute.

WATER SYSTEM REHABILITATION. Because of the age of the systems in the United Kingdom and Western Europe there is a great deal of emphasis among the water research centers and others on cost-effective means of distribution system rehabilitation. This basic information would be used as a springboard to launch a major effort in the U.S., directed at specific U.S. problems and available approaches.

WATER REUSE. In many parts of the U.S., wastewater reuse is already being practiced as a means of stretching available resources. Reuse is practiced to a greater extent in many other arid parts of the world. While direct research is very expensive because it is primarily related to health effect studies the Foundation can play a major role in compiling and collating information from around the world. The Foundation's current program in this area could be greatly expanded in both extent and scope of involvement.

ENERGY CONSERVATION. Water utilities have requested guidance in the conservation of energy by optimizing the operation of their systems. A major effort would be required to categorize the various types of operations and to develop various alternatives for conservation techniques and/or approaches.

STATEMENTS OF:
RUSSELL PETERSON, PRESIDENT, NATIONAL AUDUBON SOCIETY
LOUIS FERNANDEZ, CHAIRMAN OF THE BOARD, MONSANTO CO.
LOUISE C. DUNLAP, PRESIDENT, ENVIRONMENTAL POLICY INSTITUTE

Senator DOMENICI. Could we have the next witnesses, Dr. Russell Peterson, president, National Audubon Society; Dr. Louis Fernandez, chairman of the board, Monsanto Co.

Mr. FERNANDEZ. We also have Ms. Louise Dunlap, president of the Environmental Policy Institute.

Senator DOMENICI. I regret to tell you that Senator Mattingly has arrived. I really didn't mean it that way. It means that I get to go. Thank you very much for being on time, since I wasn't.

Senator MATTINGLY [presiding]. We hope you work on the budget in your spare time. Dr. Peterson.

Mr. FERNANDEZ. I am Louis Fernandez of Monsanto Co., Mr. Chairman. Several months ago, several senior executive officers of America's leading chemical manufacturers and of various national environmental organizations formed an ad hoc committee to examine, among other environmental issues, the Environmental Protection Agency's fiscal year 1985 research and development budget. Our committee was chaired by Dr. Peterson and myself. We are here today, along with Ms. Dunlap, to express our concern over EPA's Office of Research and Development's fiscal year 1985 budget.

I might add, this was a kind of unique collection of organizations that got together to take upon themselves this study. It included some 10 of the principal environmental groups and 5 major chemical companies represented in the discussions.

Yet, we were all able to arrive collectively on a point of view which suggests we should increase the scientific and technical resources of EPA. In fact, we believe that an additional $101 million should be added to the fiscal year 1985 budget above the total EPA budget request submitted by the administration.

We present this recommendation to you because of our deep concern that the scientific base on which the Agency's regulatory decisions are founded has not been expanded appropriately in recent years due to severe cuts in the R&D budget of EPA.

Our conclusions and recommendations are contained in a detailed statement for the record and are presented to you, because we believe the acceptance of these recommendations would substantially strengthen EPA's R&D capability and put it in a more solid position for the years ahead.

This Agency has an important research and development position to carry out which we believe is essential to be properly funded.

Our recommendations were not lightly arrived at. They are based on several months of study by top scientists and research managers, chosen from our various organizations who have probed EPA's R&D budget in some depth.

The investigation involved discussion of past and present activities with key EPA officials, both present and past, and the specific goals of this effort were really to understand the budgetary program and management history of ORD.

I would like to take liberty to speak personally as a senior officer of a major U.S. corporation with a very substantial research effort. I think that qualifies me to make certain observations about how research should be conducted.

Any enterprise supporting a major research program knows that research must be supported with stable funding. Above all else, effective research takes time and patience. It must be planned and carried out on a long-term, rather than on a year-to-year basis, and the people involved in research and development programs must have the confidence that can only come with knowing that support for their programs will be reasonably stable and the resolve to see their programs through will continue over several years.

Unfortunately, the funding for research and development at EPA has been anything but stable. The fiscal year 1985 budget submitted by the administration in constant dollars is 39 percent less than the 1980 budget and some 15 percent below the funding level as far back as 1973 when the Agency was only 2 years old.

The funding has fluctuated. It has varied by 56 percent from a high in 1975 to its lowest level in 1983. And at the same time, staffing has dropped from over 2,000 to slightly under 1,400.

Competent, properly planned research simply cannot be conducted in this type environment.

A second observation I would like to make is people managing research programs must have the flexibility to adjust their efforts to deal with both significant findings and unanticipated problems. They must be able to shift funding and personnel as modified programs dictate and, when necessary, recruit new personnel with special expertise. Severe budget restraints and year-to-year funding instability can only lead to poor morale and inevitably this funding pattern will drive the best scientific talents to other pursuits.

The last major point I would like to stress is research and development efforts must be adequately funded vis-a-vis the scope of the work to be done. It is clear that funding for EPA's research efforts is not keeping pace with the workload being mandated by Congress.

The recent passage of several new and major environmental laws further suggests the gap between EPA's research capabilities and the expectations of Congress will grow even wider if funding is not increased. Therefore, and on behalf of the scientists and research managers from the organizations I am representing here today, I strongly urge that funding for EPA's Office of Research and Development be substantially increased in the fiscal 1985 budget.

In the testimony submitted for the record, several R&D programs are identified that we feel merit additional or startup funds that are not now included in the budget.

In closing, I wish to emphasize that EPA regulations and programs must be based on sound scientific information and this information can only come from sophisticated, credible state of the art research. We in industry are pleased to stand on this common ground with environmental groups. We ask that you keep the recommendations of our collaborative efforts in mind as you hear the views of others regarding EPA's research budget.

Now, I would like to ask Mr. Peterson if he would add a comment from his perspective.

Senator MATTINGLY. Dr. Peterson.

STATEMENT OF DR. PETERSON

Mr. PETERSON. Mr. Chairman, I appreciate very much being here with my colleague Louis Dunlap, who is president of the Environmental Policy Institute. We are here representing the 10 environmental organizations that have joined in this collaborative effort and certainly we, too, consider this an historic occasion to be here with Dr. Fernandez presenting a common viewpoint for major chemical companies and major environmental groups.

Dr. Fernandez has spoken for all of us, and I hope you will accept the written testimony which each of the three of us has submitted to the committee.

Let me make these very few comments in addition. I, too, have been involved in research and development for many, many years with duPont Co. leading large research organizations, and I have been close to the R&D effort of EPA ever since I headed the Council on Environmental Quality back in 1973 to 1976. From that background, I certainly am deeply concerned about the fact that as the Congress has given EPA ever-increasing workload calling for major efforts in the R&D area, the budget has been cut and certainly incompatible providing the country with the scientific knowledge, the background so essential to producing the regulations that are necessary if our country is going to have trust in that institution and trust in the laws and regulations involving protecting the environment. So we consider this of very critical importance not only to the near term, but over the long term, because you don't just go out and do research for a few months and expect to get results. You need to do it for many years on an ongoing basis.

So we are joining then in asking you consider adding to the administration's request for EPA's R&D $101 million. That is an add-on to the total of the EPA budget.

Senator MATTINGLY. Thank you very much.

Ms. Dunlap.

STATEMENT OF LOUISE DUNLAP

Ms. DUNLAP. I would just like to add this historic collaborative effort was not easily arrived at. I think it is probably the first time that I know of that the representatives of the chemical industry and environmental organizations have jointly come before Congress on a budget matter.

It is important that the committee know that this exercise was undertaken with great candor and cooperation and that the seriousness of the situation at EPA is really what brought us together on this effort. The industry needs the predictability and continuity of a good Federal agency as much as the public needs it for the sake of protection of public health and the environment. If the public is going to have confidence that the Environmental Protection Agency is carrying out its duties seriously, it must know that the Congress is standing behind the laws it passed, and that we do build in this predictability and continuity.

We feel these are very key elements. EPA cannot function on a yo-yo basis as it has in terms of the funding situation. We accept the fact that there are many economic activities in this country that are vital to the economy, the defense of the Nation, the luxuries that we all enjoy, and we know that the very nature of some of those activities are polluting.

We do not want to get to the point in this country where citizens feel so unprotected by their Government agencies that they start challenging the activities that we all, as a society, are depending upon.

I think Lou Fernandez deserves tremendous recognition for bringing this effort together with Russ Peterson, and we hope that you all as a committee appreciate the historic nature of this collaborative effort. Thank you.

Senator MATTINGLY. Mr. Peterson, Mr. Fernandez, Ms. Dunlap, we thank you for your testimony on the EPA's research budget. What you are requesting is that the EPA's R&D budget be increased by 85 percent over the fiscal year 1984 level and, more specifically, that we add funds in these research areas. This is a serious undertaking, given the current concern of the Federal spending, but this committee will give it very careful consideration. Thank you.

[The statements follow:]

STATEMENT OF LOUIS FERNANDEZ, CHAIRMAN, MONSANTO CO.

Several months ago, senior executive officers of America's leading chemical manufacturers and national environmental organizations formed an ad hoc committee to examine, among other environmental issues, the Environmental Protection Agency's FY 1985 research and development budget. Our committee was chaired by myself and Dr. Russell W. Peterson, President of the National Audubon Society. I am here today, with Dr. Peterson to express our concern over the EPA's Office of Research and Development (ORD) FY 1985 budget. Organizations who participated in our review of the budget are:

Natural Resources Defense Council
Environmental Defense Fund
Environmental Policy Institute
National Wildlife Federation
Izaak Walton League
Sierra Club
Wilderness Society
Friends of the Earth
National Parks and Conservation Association
National Audubon Society
American Cyanamid
Dow Chemical Company
Exxon Chemical Corporation
Union Carbide
Monsanto

As you can see, this is a diverse group of industrial and environmental organizations. We collectively urge you to increase the scientific and technical capabilities and resources of EPA. We believe that an additional $101 million should be added to the FY 1985 budget of the EPA's Office of Research and Development over and above the total EPA budget request submitted to you by the Administration. We present this recommendation to you because of our deep concern that the scientific base on which the Agency's regulatory decisions are founded has not been expanded appropriately in recent years due to severe cuts in the research and development budget of the EPA. In addition, the scientific capability has been eroded because of the way budgeting has been handled and the consequent loss of key scientific personnel.

Our conclusions and recommendations, contained in a detailed statement for the record, are presented to you because, we believe, acceptance of these recommendations would place the Office of Research and Development in a more solid position in the years ahead. This would help the EPA to carry out its important research and development missions in ways that will better serve the American people.

Our recommendations are based on several months of study by top scientists and research managers chosen from our organizations who have probed EPA's ORD in some depth. Part of the investigation involved discussion of past and present ORD activities with key EPA officials, past and present. The specific goals in this effort were to understand the budgetary, program, and management history of ORD.

As a senior officer of a major U. S. corporation with a continuing, substantial research effort, I feel I am qualified to make certain observations about how research should be conducted. Any enterprise supporting a major research program knows that research must be supported with stable funding. Above all else, effective research takes time and patience. It must be planned and carried out on a long term rather than a year-to-year basis. The people involved in research and development programs must have the confidence that can only come with knowing that support for their programs will be reasonably stable and that the resolve to see the programs through will continue over several years.

Unfortunately, the funding for research and development at EPA has been anything but stable. The FY 1985 budget submitted by the Administration (in constant dollars) is 39 percent less than the 1980 budget and some 15 percent below the funding level back in 1973 -- when the agency was only two years old. The funding has varied by 56 percent from a high in 1975 to its lowest level in 1983. At the same time, staffing has declined from 2,050 to 1,380. Competent, properly planned and managed research simply cannot be conducted in this kind of environment.

The second major observation that I would like to make is that the people managing research programs must have the inherent flexibility to adjust their efforts to deal with both significant findings and unanticipated problems, as inevitably they are encountered. They must be able to shift funding and personnel as modified programs dictate and, when necessary, recruit new personnel with special expertise. Severe budget restraints and year-to-year funding instability can only lead to poor moral; and, inevitably, this funding pattern will drive the best scientific talent to other pursuits.

The last major point I would like to stress is that research and development efforts must be adequately funded vis-a-vis the scope of the work to be done. It is clear that funding for EPA's research efforts is not keeping pace with the workload being mandated by Congress. The recent passage of several new and major environmental laws further suggests that the gap between EPA's research capabilities and the expectations of Congress will grow even wider if funding is not increased.

Accordingly, on behalf of the scientists and research managers from the organizations I am representing here today, I strongly urge that funding for EPA's Office of Research and Development be increased substantially in the FY 1985 budget.

In the writer's testimony, submitted for the record, several R&D programs are identified that we feel merit additional or start-up funds -- not now included in the proposed FY 1985 budget.

In closing, I wish to emphasize that EPA regulations and programs must be based on sound scientific information and this information can only come from sophisticated, credible, state-of-the-art research.

We in industry are pleased to stand on this common ground with these environmental groups. We ask that you keep the recommendations of our collaborative effort in mind as you hear the views of others regarding EPA's research budget.

Thank you. I will, of course, be happy to answer any questions.

STATEMENT OF RUSSELL W. PETERSON, PRESIDENT, NATIONAL AUDUBON SOCIETY

I DON'T KNOW IF MEMBERS OF THIS COMMITTEE RECOGNIZE THIS AS AN HISTORIC EVENT, BUT I CERTAINLY DO. YOU HAVE BEFORE YOU A PANEL SPEAKING NOT ONLY FOR TEN NATIONAL ENVIRONMENTAL ORGANIZATIONS BUT FOR FIVE OF THE NATION'S MAJOR CHEMICAL ORGANIZATIONS AS WELL. THE TWO GROUPS HAVE OFTEN BEEN ON THE OPPOSITE SIDES OF ISSUES, BUT WE ARE STRONGLY UNITED ON THE ISSUE BEFORE US TODAY. AND THAT ISSUE IS SIMPLY THIS:

> OUR NATION'S ENVIRONMENTAL PROTECTION AGENCY'S RESEARCH AND DEVELOPMENT PROGRAM IS SERIOUSLY UNDER-FUNDED AND NEEDS A MAJOR INFUSION OF FUNDS PROMPTLY.

THE NATION'S ENVIRONMENTAL LAWS NEED TO BE SOUND, REASONABLE, FAIR AND EFFECTIVE. TO BE SO, THE LAWS MUST BE BASED ON THE BEST AVAILABLE SCIENTIFIC KNOWLEDGE.

TO GAIN THIS KNOWLEDGE, WE MUST HAVE ADEQUATE AND CONSISTENT FUNDING FOR RESEARCH AND DEVELOPMENT IN THE ENVIRONMENTAL PROTECTION AGENCY. UNFORTUNATELY, HOWEVER, E.P.A.'s RESEARCH AND DEVELOPMENT IS STARVED FROM LACK OF RESOURCES. IT'S BUDGET HAS BEEN NEITHER ADEQUATE NOR CONSISTENT FOR THE PAST TEN YEARS.

THE AGENCY'S WORKLOAD HAS ENORMOUSLY INCREASED SINCE 1976. YET THE AGENCY'S RESEARCH AND DEVELOPMENT BUDGET MEASURED IN CONSTANT DOLLARS IS LOWER NOW -- BY FIFTEEN PERCENT -- THAN IT WAS IN 1973, RIGHT AFTER E.P.A. WAS ORGANIZED.

WE URGE THAT E.P.A.'s PROPOSED RESEARCH AND DEVELOPMENT BUDGET BE INCREASED BY $101 MILLION FOR THE NEXT FISCAL YEAR, AND THAT THIS AMOUNT BE ADDED TO -- NOT TAKEN FROM -- THE OVERALL E.P.A. BUDGET.

OUR GROUP HAS IDENTIFIED EIGHT AREAS WHERE ADDITIONAL WORK SHOULD BE CARRIED OUT.

I AM EXPRESSING THESE CONCERNS ON BEHALF OF:

AMERICAN CYANAMID
DOW CHEMICAL COMPANY
EXXON CHEMICAL COMPANY
UNION CARBIDE
MONSANTO
NATURAL RESOURCES DEFENSE COUNCIL
ENVIRONMENTAL DEFENSE FUND
ENVIRONMENTAL POLICY INSTITUTE
NATIONAL WILDLIFE FEDERATION
IZAAK WALTON LEAGUE
SIERRA CLUB
WILDERNESS SOCIETY
FRIENDS OF THE EARTH
NATIONAL PARKS AND CONSERVATION ASSOCIATION
NATIONAL AUDUBON SOCIETY

LAST YEAR, SENIOR EXECUTIVE OFFICERS OF OUR SIXTEEN ORGANIZATIONS INITIATED A SERIES OF MEETINGS TO CONSIDER WHAT WE MIGHT DO TOGETHER TO STRENGTHEN OUR NATION'S ENIVRONMENTAL LAWS AND INSTITUTIONS. WE DECIDED AS A FIRST STEP TO EXAMINE THE ENVIRONMENTAL PROTECTION AGENCY'S RESEARCH AND DEVELOPMENT CAPABILITY. OUR COMMITTEE WAS CHAIRED BY DR. LOUIS FERNANDEZ, CHAIRMAN OF THE BOARD OF MONSANTO, AND MYSELF.

OUR RECOMMENDATIONS ARE BASED ON SEVERAL MONTHS OF STUDY BY TOP SCIENTISTS AND RESEARCH MANAGERS CHOSEN FROM OUR ORGANIZATIONS WHO HAVE PROBED E.P.A.'s O.R.&D. IN SOME DEPTH. PART OF THE INVESTIGATION INVOLVED DISCUSSION OF PAST AND PRESENT O.R.&D. ACTIVITIES WITH DOUGLAS COSTLE, FORMER E.P.A. ADMINISTRATOR, AND OTHER KEY E.P.A. OFFICIALS, PAST AND PRESENT, INCLUDING DR. BERNARD GOLDSTEIN, THE CURRENT COMPETENT HEAD OF E.P.A.'s RESEARCH AND DEVELOPMENT OFFICE.

HERE ARE SOME OF OUR MAIN CONCERNS:

FIRST, THE F.Y. 1985 BUDGET SUBMITTED BY THE ADMINISTRATION IS (IN CONSTANT DOLLARS) THIRTY-NINE PERCENT BELOW THE 1980 BUDGET

AND EVEN FIFTEEN PERCENT BELOW THE BUDGET BACK IN 1973, JUST AFTER E.P.A. WAS FIRST ORGANIZED.

SECOND, THE FULL-TIME EQUIVALENT STAFF POSITIONS HAVE STEADILY DECLINED FROM 2,050 IN 1973 TO 1,380 IN 1984; 670 FEWER.

THIRD, DURING THESE SAME PERIODS, AS YOU KNOW, CONGRESS HAS PASSED A NUMBER OF NEW LAWS, ALL OF WHICH REQUIRE ADDITIONAL R & D RESOURCES FOR E.P.A. SOME OF THESE ARE THE RESOURCES CONSERVATION AND RECOVERY ACT; TOXIC SUBSTANCES CONTROL ACT; SAFE DRINKING WATER ACT; SUPERFUND (CERCLA); AND MAJOR AMENDMENTS TO THE CLEAN AIR ACT, THE CLEAN WATER ACT, AND THE FEDERAL INSECTICIDE, FUNGICIDE AND RODENTICIDE ACT.

IN ALL MY YEARS OF MANAGING RESEARCH PROGRAMS, BOTH IN THE PRIVATE AND PUBLIC INTEREST SECTORS, I HAVE NEVER ENCOUNTERED A SITUATION SUCH AS THE ONE AT THE E.P.A. O.R.&D. WHERE THE BUDGET HAS MARKEDLY DECREASED AS THE WORKLOAD HAS GREATLY EXPANDED.

EIGHT SPECIFIC R & D PROGRAMS MERIT ADDITIONAL OR START-UP FUNDS NOT NOW INCLUDED IN THE ADMINISTRATION PROPOSAL. THEY ARE RESEARCH ON HAZARDOUS WASTE CONTROL TECHNOLOGY, INDOOR AIR POLLUTION, HEALTH AND ENVIRONMENTAL EFFECTS ASSESSMENT, RISK ASSESSMENT METHODOLOGY, DATA AUTOMATION AND COMPUTERIZATION, PLANNING AND EXPANSION OF INTERNAL E.P.A. RESEARCH FACILITIES, AND SUPPORT OF SCIENTIFIC WORK IN EXTERNAL RESEARCH AND ACADEMIC CENTERS.

WE STRONGLY URGE YOU TO SUPPORT THESE INITIATIVES BY ADDING THE $101 MILLION NECESSARY TO CARRY THEM OUT TO THE F.Y. 1985 BUDGET YOU ARE NOW CONSIDERING.

OUR RECOMMENDATION IS RESPONSIVE TO AN URGENT PUBLIC NEED -- A NEED TO INCREASE THE NATION'S TRUST IN OUR ENVIRONMENTAL LAWS AND THE INSTITUTIONS YOU HAVE SET UP TO CARRY THEM OUT.

THE INCREASED APPROPRIATION WILL PURCHASE BENEFITS FOR OUR COUNTRY IN IMPROVED HEALTH AND ENVIRONMENTAL QUALITY, SOUNDER BASED REGULATIONS FOR INDUSTRY, AND INCREASED EXPERTISE IN ENVIRONMENTAL SCIENCE IN TECHNICAL AND ACADEMIC CENTERS IN THE PRIVATE SECTOR.

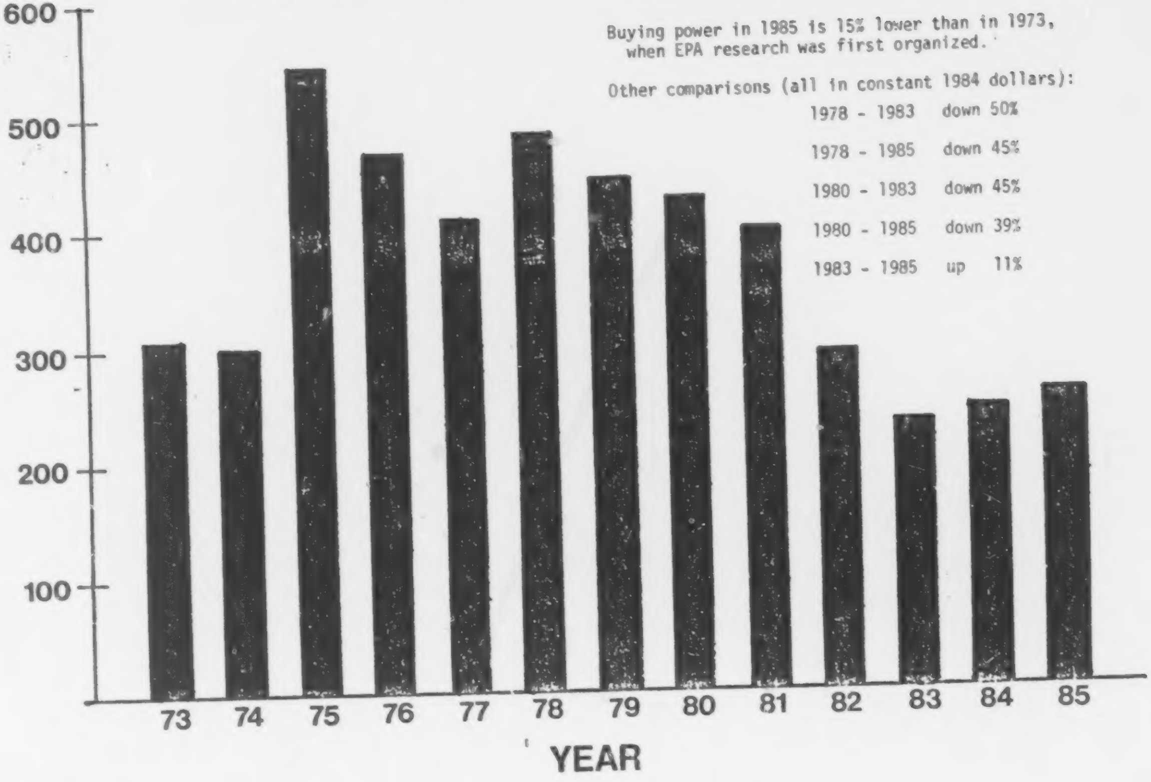
THANK YOU FOR YOUR ATTENTION.

Table 1. Additional R&D Funds to the FY 1985 Budget Request

	Initiatives	Current FY 1985 Request ($M)	Additional Funds Needed Over FY 1985 ($M)
1.	Alternative and Advanced Hazardous Waste Control Technology	(15)	12
2.	Evaluation of Potential Indoor Air Pollution Risks	--	5
3.	Health and Environmental Effects Assessment		
	A. Exposure Assessment, including Biological Monitoring	--	24
	B. Extrapolation of Animal Data to Humans	--	8
4.	Risk Assessment for Program Needs	--	15
	A. Multi-media Risk Assessment		
	B. Integration of Health and Environmental Effects		
5.	Groundwater Research, including Assessment, Monitoring and Modelling	(8)	12
6.	Development of Scientific Resources in Research and Academic Centers	(13)	10
7.	Facilities Upgrading and Construction	--	10
8.	Data Automation and Computerization	--	5
		TOTAL	$ 101M

Figure 1

EPA RESEARCH PROGRAM
Expenditures–Millions of 1984 Dollars



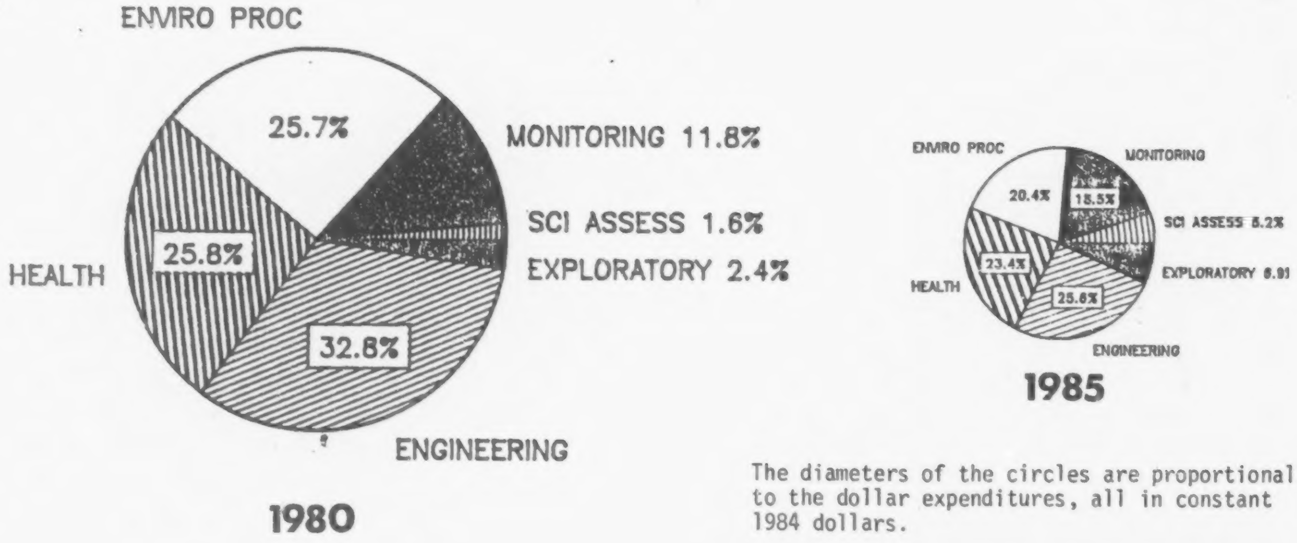
Buying power in 1985 is 15% lower than in 1973, when EPA research was first organized.

Other comparisons (all in constant 1984 dollars):

1978 - 1983	down 50%
1978 - 1985	down 45%
1980 - 1983	down 45%
1980 - 1985	down 39%
1983 - 1985	up 11%

Figure 2

EPA RESEARCH EXPENDITURES
Type of Research



The diameters of the circles are proportional to the dollar expenditures, all in constant 1984 dollars.

The decreases in Engineering and Environmental Processes are balanced by increases in the Monitoring, Scientific Assessment and Exploratory Research Programs.

STATEMENT OF LOUISE C. DUNLAP, PRESIDENT, ENVIRONMENTAL POLICY INSTITUTE

I appreciate the opportunity to appear before you this morning to provide our views on the FY 1985 E.P.A. budget and to urge enact of the recommendations of the ad hoc committee of ten national environmental organizations and five of the largest chemical manufacturing companies in America.

This historic exercise in jointly making recommendations to Congress has been marked by candor and cooperation. Fully acknowledging our areas of difference, this unique committee began its discussions more than a year ago with the goal of exploring the urgency of our common interests in restoring public credibility, adequate funding, necessary personnel resources and sound management to EPA. It was agreed that the public's confidence in the integrity of EPA's commitment to fairly and effectively implementing environmental laws is vital to the public's acceptance of many business activities which by their very nature contribute to pollution. It was also agreed that fiscal austerity was not an excuse to deprive the E.P.A. of those financial resources needed to carry out its responsibilities.

Having arrived at those understanding, we set out to examine the structure, personnel and funding levels and the short- and long-term responsibilities of the Office of Research and Development (ORD). With the valuable assistance of former and present Agency authorities, the committee examined the impacts of repeated funding cuts in E.P.A.'s ORD budget. Mindful that the constantly changing nature of the Agency's research tasks would necessarily alter funding levels within specific programs, we saw disturbing trends in funding levels overall that have created great instability within ORD and other parts of the Agency. Funding cuts and the absent of funding predictability have contributed to critically low morale at ORD, while severely handicapping E.P.A. research mandated by many pollution control laws and necessary for improved promulgation of regulations.

Despite President Reagan's anouncement in his State of the Union address in February of this year that, "...I have requested for E.P.A. one of the largest percentage budget increases of any agency.", E.P.A.'s rsearch capabilities have been severely hampered over the past four years. That its research budget will increase by 14% over the previous year's level is overshadowed by the fact that the proposed level is 39% below that of 1980 and 15% less than provided in 1973 when the Agency was in its earliest stages of organization. Since then, the Agency has taken on the enforcement responsibilities of the nation's vital and complex toxic pollution control laws.

This nation's commitment to environmental protection has never been stronger and high quality research and science are the foundations upon which that goal is built. Political rhetoric is not a substitute for the allocation of resources both in dollars and in personnel. Now is the time to restore ORD's former levels of budgeting and competence. We believe that our package of budget increases for ORD will meet that objective.

They are designed to improve the Agency's essential data-gathering functions while providing additional scientists to interpret the information and offer guidance to the formulation of policy options to resolve problems. Short-term research applied to standard-setting procedures demands flexibility in the administration of a research office. Long-term research of better pollution control equipment, trans-boundary and global pollutants and the health effects of exposure to low levels of toxic substances are fundamental responsiblilities of the federal government. Each of these elements is reflected in our recommendations.

Our specific recommendations are the following:

a. Hazardous waste control - $12 million above FY 85 request. Rationale: R&D is needed in the following areas:
    - chemical detoxification processes designed to render toxic substances and wastes inert;
    - advanced combustion and thermal systems to physically decompose toxic wastes;
    - solvent extraction technology and genetically-engineered organisms; and
    - application of similar new technology at waste disposal sites and for removal of wastes from illegal disposal sites.

b. Evaluation of potential indoor air pollution - $5 million. Rationale: indoor air pollution has become an issue of growing concern within the health community, particularly where high levels of toxics in drinking water have been discovered. There should be research in the areas of:
    - surveys of indoor environmentals in the vicinity of hazardous waste sites;
    - developing methods for sampling volatile organic compounds, pesticides, combustion products, particle-absorbed organic compounds, etc; and,
    - source charaterization studies of commonly used chemicals.

c. Health and environmental effects assessment - $32 million.

I. Exposure assessment ($24 million)

Rationale: There is a need to quantify the intrinsic potential for a given compound to produce a particular adverse effect and an assessment of the exposure level below which those effects will not materialize. More emphasis is currently given to hazard assessment, whereas, less attention is given the extent of exposure to hazardous compounds.

II. Extrapolation of animal data to humans ($8 million)

Rationale: By establishing stronger extrapolative links between health effects of chemicals in animals and humans, better predictions of human risk can be made. Improved understanding of the impacts and mechanisms of action that chemicals have in animals and humans will facilitate that extrapolative analysis.

d. Risk assessment for program needs - $15 million

Rationale: By integrating risk assessment of multiple pollutants in more than one medium, regulators can be provided more effective means to deal with multi-media problems such as hazardous waste disposal. Pathway analysis, population dynamics, ecological and health effects must all be integrated into an overall risk assessment process. Research should be focused upon exposure quantifications and identification of environmental indicators which can signal ecosystem contamination.

e. Groundwater research assessment, monitoring and modeling - $12 million

Rationale: Nearly half of America's drinking water comes from underground aquifers. It is essential, therefore, that field validation of models accurately predict potential for, and extent of contamination from disposal of hazardous and nuclear wastes, pesticide use and the mobility of heavy metals leached from natural deposits by chemical actions caused by man-made pollutants. Research should concentrate on predictability of flow of pollutants through soil and the paths those pollutants follow to groundwater resources.

f. Develop scientific resources in research and academic centers - $10 million

Rationale: The exploratory grants and Centers program is currently being funded at less tha half of the amount Congress originally intended. If E.P.A. is to reap the benefits of the academic community's expertise while encouraging and supporting the expansion of graduate programs in vital health and environmental sciences funding for the Centers must be doubled. Furthermore, two Centers should be added to the eight currently in existence. The grants program is woefully underfunded. Consequently, many promising research proposals approved by outside peer review panels cannot be funded. This is a serious loss to the Agency and to the resolve of some of the most pressing environmental problems facing this nation.

g. Facility upgrading and construction - $10 million

Rationale: By 1990, the research facilities at Research Triangle Park must be replaced. Detailed planning for new facilities must begin immediately. Upgrading of existing facilities to handle hazardous chemicals and improved containment procedures necessary for biotechnical research programs is also a high priority.

h. Data automation and computerization - $5 million

Rationale: At a time whien high-tech evolution has become a matter of national pride and technologic advancement, it is essential that our federal agencies have access to the best available equipment. There is a need to develop and implement a comprehensive plan to improve and update the scientific computing capabilities of the ORD both for meeting its regulatory obligations and providing the Congress with the most accurate and defensible conclusions to justify legislative proposals and enforcement activities.

These are the essential components of our proposal to revitalize ORD and equip it with the necessary resources and personnel deprived the Agency by recent budget cuts. With the adoption of these funding increases, the Congress will be exercising its responsibility towards assuring that E.P.A. is not denied the vital tools needed to enforce the laws Congress passed to protect the environment and the public's health. Industry also needs predictability and continuity of E.P.A.'s commitment to implement environmental laws to facilitate improved management planning. By ham-stringing the Agency's ability to enforce those laws, new environmental crisis and catastrophes loom in our future. Neither the public nor the chemical industry benefits when the federal government pursues a wait-and-see attitude towards environmental protection.

The interests of the nation are best served when the public has reason to believe that the products of industry are safe and their production regulated by government agencies equipped to make decisions about risk assessment which are based upon sound scientific judgement. The coalescing conclusion of our ad hoc committee is that both industry and the public profit from a highly professional and adequately funded U.S. Environmental Protection Agency.

Our findings and recommendations provide Congress with some elements of a blueprint for the difficult task of rebuilding public and industry confidence in E.P.A.

STATEMENT OF WILLIAM HARRINGTON, REPRESENTING SAN DIEGO, CALIF.

SUMMARY OF STATEMENT

Senator MATTINGLY. Mr. Harrington.

Mr. HARRINGTON. Good morning. We have submitted a longer statement for the record of this hearing. I will proceed with a brief summary.

Senator MATTINGLY. Thank you.

Mr. HARRINGTON. I am William Harrington. I represent the city of San Diego. I wish to express my appreciation for this opportunity to speak on a matter of great importance to San Diego.

Mr. Chairman, the city seeks additional funds to EPA's fiscal year 1985 budget which will grant San Diego relief from a major source of pollution which affects its public health, environment, and economy.

Daily, millions of gallons of untreated industrial and domestic sewage flow uncontrolled from Tijuana, Mexico, from its chronically disabled sewage system, across international border into the United States, contaminating the land and waters of San Diego and its neighboring cities.

This sewage constitutes a hazard to the health and environment of southern California citizens and could erupt into a public health emergency at any time. Frustratingly, it does not appear that the Government of Mexico has assigned a high priority to the remedy of this intolerable condition.

In the past, band-aid solutions have been applied to the problem by Mexico and the United States, but it is obvious now that it will take a tourniquet rather than a band-aid to stop this pollution hemorrhage.

Consider that Tijuana's present population of nearly 1 million people is projected to increase two and a half times in the next 17 years. In the same period, because of increased water supply, the volume of Tijuana sewage is projected to increase by five times. Certainly if this pollution were of U.S. origin affecting U.S. citizens, as it does, EPA would have forced its cleanup long ago, but because it originates outside the United States, EPA is powerless to deal with it and San Diego has become Tijuana's cesspool.

Mr. Chairman, those who are familiar with this situation, the Environmental Protection Agency, the State of California, San Diego, and its neighboring cities, are convinced that if this condition is to be reversed, the initiative must come from the U.S. side of the border. Consequently, these agencies are jointly funding a study of potential solutions to this sewage nightmare. The study's conclusions will guide San Diego in a cost-effective response to this environment and public health menace. This study will be completed soon, and while the best solution cannot be known until the study is finished, technical data available now indicates the sewage overflows can be controlled economically.

Mr. Chairman, we seek to protect the health and environment of the U.S. citizens against the vagaries of a foreign city's sewage system. San Diego proposes the construction of a simple defensive system on the U.S. side of the border to accomplish this purpose. Our studies indicate a system can be built for no more than $55 million which would provide protection against raw sewage flows into the next decade. The cost of this construction can be spread over a 2-year period, requiring only the addition of $25 million to EPA's fiscal year 1985 budget to start work this year.

A bill authorizing such a defensive system has been jointly introduced by Senators Wilson and Cranston of California. It is currently pending in the Public Works Committee.

Mr. Chairman, with the responsibility of the Federal Government to protect its citizens against foreign threat, the health, environment, and livelihood of U.S. citizens are threatened daily by uncontrolled and untreated sewage flows from Mexico. San Diego and its neighboring cities ask for help in erecting a defense against the callous imposition of pollution and contamination of Mexico on citizens of the United States who reside and work in the San Diego area.

Thank you, Mr. Chairman, for your courtesy. I will be pleased to answer any questions you may have at this time.

Senator MATTINGLY. Thank you very much, Mr. Harrington. Your full statement will be made a part of the record.

I know you and the mayor of San Diego have met with Senator Garn on the issue. He has asked Senator Laxalt to look into this issue. What is the status of the bill on the House side?

Mr. HARRINGTON. Last week, the Water Resources Subcommittee of the House Public Works Committee reported a bill to the full committee which included language and amendment to the Clean Water Act, language which provides authorization for grants to the city of San Diego to construct facilities to treat not less than 60 million gallons a day, such funds as may be necessary for that purpose.

It is expected that that language will go to full committee markup this Thursday and we anticipate it will hold and be reported out.

Senator MATTINGLY. Thank you very much, Mr. Harrington.

Mr. HARRINGTON. Thank you, sir.

[The statement follows:]

STATEMENT OF WILLIAM HARRINGTON, WASHINGTON REPRESENTATIVE FOR THE CITY OF SAN DIEGO, CALIF.

Good Morning Mr. Chairman and Members of the Committee:

My name is William Harrington. I represent the City of San Diego in Washington. I wish to express my appreciation for this opportunity to speak on a matter of great importance to San Diego. We trust, after you have heard our description of a situation which EPA officials identify as the most serious water pollution problem in Federal Region IX, a four state area, that you will be compelled to act favorably towards San Diego's plea.

Mr. Chairman, we seek an appropriation of funds which will give the San Diego region relief from a source of environmental pollution which presently it has no ability to control. This pollution, in the form of millions of gallons of untreated industrial and domestic sewage, flows daily uncontrolled from Tijuana, Mexico, across the international border into the United States contaminating the land and waters of San Diego and its neighboring cities. This sewage constitutes a daily hazard to the health and environment of southern California citizens and could erupt into a public health emergency at any time.

The City of San Diego is located in the most southwestern part of the United States. Its southern corporate boundary is coterminous with the California-Mexico border. Directly south of San Diego lies Tijuana, Mexico whose northern limits are likewise coterminous with the international line. Since the 1930's Tijuana has grown from a small frontier outpost into a commercial/residential city of approximately one million inhabitants. And, because economic opportunity is greater in proximity to the United States than in Mexico's interior, its population is expected to more than double in the next twenty years.

Tijuana is well known throughout the western United States and Canada for its colorful sporting events, its cultural and scenic attractions and its international shopping plazas. What is not as well known is this city, approximately equal in population to the seventh largest city in the United States, has neither a reliable sewage collection system nor a sewage treatment facility. Moreover, only about 45 percent of Tijuana's population is, or can be, currently connected to the city's sewerage system. The balance either use septic tanks or have no system of sewage disposal at all. Yet, despite this lack of connections, Tijuana's system currently collects approximately 18 million gallons per day (MGD) of sewage. A combination of anticipated population increase, future connections to the collection system, and an increased water supply from the Colorado River could more than quintuple this current volume by the end of the century.

To compound the problem, it is not unusual for Tijuana's sewage collection and disposal system to fail completely. Not for hours, not for days, not even for months, but for years at a time. It is a matter of fact that San Diego has been receiving and disposing of Tijuana's sewage daily for the past three years because of such system failures.

You may wonder why we concern ourselves with the condition of a foreign city's sewers. Quite simply because San Diego is at a lower elevation than Tijuana. In addition, for a good part of the year, the Pacific Ocean currents flow northward along the Mexican coastline to California shores. Be assured, Mr. Chairman, were it not for these facts of municipal infrastructure and geography, Mexican sewage would be of no concern to San Diego. But the facts are inescapable. And their consequence is millions of gallons of raw sewage pouring daily, uncontrolled, onto the land and into the sea, crossing the border from Mexico to pollute and contaminate nearby U.S. valleys, rivers, and seashores.

For half a century, federal, state, and local agencies have struggled with this problem. In August of 1983, Mexican President Miguel de la Madrid, visiting Baja California Norte for the first time since taking office, announced plans for the construction of a sewage system that would help prevent (rather than simply prevent) pollution of the coastline on both sides of the border. de la Madrid's secretary of urban development and ecology announced during the same visit, that the Mexican government had budgeted (not appropriated) funds to begin construction of the planned sewage system. Another advisor to de la Madrid said the president was declaring his administration's intention to develop a sewage system. Regretfully, this rhetoric is familiar to San Diegans. American presidents have repeatedly urged Mexican presidents to resolve this historic problem. The State Department has worked diligently with the Mexican foreign ministry to execute agreements which will mitigate the pollution hazard. Yet, despite long-term efforts by both countries, the problem only increases in severity. And candidly Mr. Chairman, the citizens of San Diego and its nearby communities who are forced to live daily with the pollution which flows from Mexico, grow impatient with the pace of a diplomatic search for a permanent solution.

San Diego is convinced that if this problem is to be solved, the initiative must come from the American side of the border. We also believe that the control of pollution which emanates from Mexico is the responsibility of the United States. For these reasons we appear before you today to state our case and ask for advice and assistance.

Let me set the background of our request. Since the 1930's San Diego and its environs have suffered pollution from Tijuana sewage. During the early years, the Mexicans built rudimentary facilities which were regularly overwhelmed by increasing demands.

In 1965 a "band-aid" effort took the form of a 20 year service agreement between the United States and Mexico. The two nations agreed that the City of San Diego would accept sewage from Tijuana into the City's Metropolitan Sewer System (Metro) under emergency conditions. The reason for this pact was to avert serious health and environmental problems in both countries due to the discharge of large quantities of Mexican sewage in the two border communities or into the Pacific Ocean near the international boundary.

During the first ten years of the agreement, San Diego treated Mexican sewage on an average of 26 days per year. However, in the mid-seventies the usage increased dramatically. In 1976 Tijuana sewage was treated 90 days and rose to 253 days in 1978. For the past three years San Diego has treated Mexican sewage for 365 days each year. In effect, there has been, and is, a permanent emergency in the Tijuana sewage system. As a consequence, San Diego is collecting, treating and disposing of nearly 80 percent of Tijuana's daily sewage load on a continuing basis.

While this daily treatment of Mexican sewage has been a burden, consider the alternative. If Tijuana's system were fully operational, it would pump approximately 18 million gallons a day of untreated sewage into the Pacific Ocean surf a few miles south of the border. The local U.S. ocean shoreline has been spared the major pollution and contamination which surely would result from the discharge of such enormous quantities of untreated sewage only because of Tijuana's permanent "emergency." Under this emergency condition, San Diego, because of contractual obligations and self-interest, receives into its system 13 million gallons of Mexican sewage daily for treatment and disposal. Tijuana pumps the balance of its daily flow, 5 MGD, into the ocean a short distance below the border. Believe me when I say, it is not difficult to locate this discharge point on the Tijuana coastline. This joint effort, the treatment by San Diego of 13 MGD, and the raw discharge of 5 MGD by Tijuana, constitutes Tijuana's present total sewage disposal method.

When Tijuana cannot pump its daily 5 MGD into the surf because of failures in its system, the 5 MGD, following land contours, flows into the Tijuana River Valley on the U.S. side of the border contaminating and polluting farm acreage. Sewage also flows into the Tijuana Valley River, which carries it to the ocean, contaminating U.S. valley waterways along the way. For part of the year, ocean currents carry this raw sewage northward fouling U.S. shorelines. Records show there was a beach quarantine in effect directly north of the international border for 307 days in 1980, 219 days in 1982, and 309 days in 1983. In August of 1983, approximately seven miles of beach north of the border was quarantined.

Another statistic which gives pause: Approximately 100 thousand illegal aliens are arrested each year in a 5½ mile stretch of border between San Diego and Tijuana extending from the Pacific Ocean eastward. Most of the aliens wade through contaminated water to gain access to the United States (they commonly have wet feet and trousers when arrested). It may be assumed that some slip through the Border Patrol and obtain jobs in American food processing or service industries. The public health implications of such a situation are clear.

In response to this intolerable situation, Mexico is unwrapping the latest band-aid. It has started construction of a 60 MGD pumping plant, a force main and a conveyance system which, when complete, will carry all of Tijuana's sewage to the present ocean discharge point 5.6 miles south of the border. The 60 MGD facility is designed to handle projected Tijuana sewage loads through 1993. Work on the pumping plant was halted in 1982 due to a peso devaluation and a change of national administration. It is approximately 50 percent complete. However, work continued on the force main and conveyance system and is said to be complete. But of course, without the pumping station the other work is useless. We are informed that some construction on the pumping plant has resumed, but it is uncertain when it will be complete. Moreover, U.S. engineers question whether the engineering, construction and maintenance of the new system, when complete, will accomodate the flow for which it is designed.

Mexico speaks of a future system which will carry sewage from Tijuana to a treatment facility to be built approximately 18 miles south of Tijuana. It is said that in addition to eliminating the present pollution problem, this facility will also reclaim sewage for agricultural uses. Unfortunately, Mexico cannot say when this facility will be operational.

Mr. Chairman, this pollution hemorrhage cannot be stopped with band-aids. What is needed now is a tourniquet. San Diego has concluded that the tourniquet is a treatment and disposal facility constructed on the United States side of the border which is capable of accepting Mexican sewage. We are joined and supported in this conclusion by the United States Environmental Protection Agency and the State of California.

As a first step, the EPA and the State requested San Diego to study treatment and disposal facility alternatives capable of processing Mexican sewage. This study was completed late last year by Lowery and Associates, an engineering consulting firm engaged by San Diego to examine the problem and to recommend a long-term solution. The consultant recommended the construction of a treatment, reclamation and disposal facility located on the U.S. side of the border providing up to 100 MGD of capacity for Tijuana and up to 30 MGD capacity for San Diego. This capacity would handle U.S. and Mexican sewage flows projected through the year 2000. Sewage would be treated to a level of advanced primary and effluent discharged through an ocean outfall.

During public hearings on the consultant's recommendation, several alternative proposals were received by the San Diego City Council. As a consequence, the City Council extended the consultant's contract to permit time to fully assess these suggestions. The consultant's report on the alternatives is due by June 30, 1984. Until that time, it cannot be said which technology will be the most cost effective for the San Diego-Tijuana situation. And, of course, the technology finally recommended by the consultant and approved by the EPA will dictate the cost of the facility.

I believe it is important at this point, Mr. Chairman, to state San Diego's priorities in this matter. Its only priority is the permanent abatement of the health threat and the environmental pollution imposed on U.S. citizens by uncontrolled and untreated sewage flows from Tijuana, Mexico, into the United States. And while the consultant's recommendation includes consideration of San Diego's future sewerage needs in the border area, the City, in the interest of an immediate start on a solution to the Tijuana problem, will not link its future needs to the present emergency.

Like Congress, local governments are familiar with difficult funding decisions The San Diego City Council can appreciate any desire the committee may have to avoid unnecessary federal spending. Therefore, the City is prepared to discuss fully any approach this committee may care to take in financing a solution to this intractable problem. Certainly, one option would be to phase the construction work necessary to bring the sewage overflows under control. Not only would such a step-by-step approach encourage an immediate low-cost, short-term solution, it would also provide an opportunity to periodically reassess the accuracy of the population and sewage flow projections on which any subsequent work would be based. This seems to be a prudent and reasonable way to proceed with the funding of this project.

A bill jointly sponsored by Senators Cranston and Wilson was introduced on April 24. This measure authorizes EPA grants to the City of San Diego to construct publicly owned treatment works in San Diego which will provide primary treatment for up to 60MGD of municipal sewage and industrial waste for the City of Tijuana, Mexico. The cost of the facility will not exceed $55 million. The POTW shall be constructed to meet provisions of the Federal Water Pollution Control Act. This bill also requires the State Department to enter into negotiations with the government of Mexico to seek contributions toward the capital cost of the POTW and to pay user fees to cover the cost of operation and maintenance of such works. This bill is currently pending in the Public Works Committee.

Finally, I would like to comment on a point related to the American and Mexican cooperation necessary for the long-term actions to develop and maintain a pollution free transborder area. The United States-Mexico agreement on "Cooperation for the Protection and Improvement of the Environment in the Border Area," signed in 1983 by Presidents Reagan and de la Madrid, is a necessary first-step to long-term cooperation between the nations. This document is intended to be the framework to which subsequent "Annexes" will be appended indentifying program priorities and defining cooperative approaches to immediate and long-term border sanitation concerns. We would hope that in the drafting of a sanitation annex, consideration will be given by the United States to a bi-national plan of mutually beneficial actions which ultimately will result in Mexcio having full responsibility for all of its sewage. In this context, any and all U.S. funds appropriated for the construction, operation and maintenance of facilities to handle Mexican sewage would be subject to reimbursement by the Government of Mexico to the United States as a result of agreements negotiated between the two national governments.

Mr. Chairman, thank you for your courtesy in listening to San Diego's petition. It has been a pleasure appearing before you. I would be happy to answer any questions you or any member of your committee may have on this presentation.

STATEMENTS OF:

WILLIAM EICHBAUM, ASSISTANT SECRETARY, MARYLAND DEPARTMENT OF HEALTH AND MENTAL HYGIENE, ON BEHALF OF THE NATIONAL GOVERNORS' ASSOCIATION

KEN HAAG, DIRECTOR, DIVISION OF AIR QUALITY CONTROL, DEPARTMENT OF ENVIRONMENTAL QUALITY ENGINEERING, ON BEHALF OF STATE TERRITORIAL AIR POLLUTION PROGRAMS ADMINISTRATORS

ROBERT MALPASS, CHIEF, BUREAU OF SOLID AND HAZARDOUS WASTE MANAGEMENT, SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL, ON BEHALF OF ASSOCIATION OF STATE AND TERRITORIAL SOLID WASTE MANAGEMENT OFFICIALS

ROBBIE SAVAGE, EXECUTIVE DIRECTOR, ASSOCIATION OF STATE AND INTERSTATE WATER POLLUTION CONTROL ADMINISTRATORS

Senator MATTINGLY. The next group will be a panel—Mr. William Eichbaum, Mr. Ken Haag, Robert Malpass, and Robbie Savage. I would really like to know how badly I mispronounced your names. Tell me your names when you begin.

Mr. EICHBAUM. I am Bill Eichbaum, assistant secretary for environmental programs from the State of Maryland. To my left is Ken Haag who is from Massachusetts and represents the State territorial air pollution programs administrators. To my right is Robbie Savage, executive director of the Association of State and Interstate Water Pollution Control Administrators; and Robert Malpass who is from South Carolina representing the Association of State and Territorial Solid Waste Management Officials.

Senator MATTINGLY. I did rather well.

Mr. EICHBAUM. As I said, I am here to represent the National Governors' Association, but I also am responsible for the environmental programs in the State of Maryland. I have under my responsibility the air program, the water program, hazardous waste, and then some non-EPA programs, such as radiation control, sanitation, food facilities—pretty much a complete gamut.

I might, as an introductory point, indicate that about 40 percent of the funding for the office of environmental programs comes from Federal funding and that is about average across the country. The program grant process from the Environmental Protection Agency is a very important part of the funding of State programs.

If you look at our total budgets, about 80 percent of our budgets are focused on people out in the field in laboratories, in the courts doing the work of cleaning up the environment. So people are a very important part of the funding process.

Basically, the National Governors' Association at their recent winter meeting adopted a resolution suggesting that there be an increase in the 1985 budget for State program grants, administration grants, and, specifically, they suggested that that increase be 10 percent over the fiscal year 1984 levels for air, water quality, and drinking water; that there be a 25-percent increase in the hazardous waste program area. This amounts to a total of $32 million more than the President's request of $237 million, which is approximately what was originally requested by Administrator Ruckelshaus.

I might make the point that that increase that was recommended by the Governors did not reflect a general request by the Governors that everything be increased. In fact, generally they suggested that any increases be kept about three-quarters of the inflation rate, except for several areas they felt were very important, including environmental issues.

I think the rationale for suggesting the increase in the area of State programs grants in the environmental area is founded on several different States. First of all, the States really are in partnership with the Federal Government in providing environmental and public health protection.

This fact is most clearly seen when you examine any of the Federal legislation virtually which gives a very important and key role to the States. That issue was reviewed by a task force appointed by Administrator Ruckelshaus at the end of 1983, and I served on that task force. For the first time, it really attempted to go through the various functions for environmental protection and see which level, State or Federal, is able to do it.

That task force concluded the States really are the prime deliverer of enforcement and day-to-day program administration for EPA, and that to the extent the States are unable to do that job, EPA really can't meet the responsibility which it has been given by Congress.

Second, I think the fact that as budgets have become more and more constricted, particularly at the Federal level, the States have really had to take up the slack, if you will, where new concerns by the public or professionals in the field have emerged that need to be dealt with.

I think some examples are perhaps useful. Sludge management from sewage treatment plants, there has never really been a Federal program targeted to that issue. Increasingly, many States have been having to generate funds to deal with that, and that takes new funding.

The ground water issue is again another one, and you will hear, perhaps, more detail from some of the other persons that are testifying before you this morning on these matters.

I might note just the issue of salaries. As we have level funding from the Federal Government but we increased our staff's salaries, that money has to come out of State resources. So there are a number of reasons why it seems to me that there is a need to recognize that the States have to pick up the slack and at least need a continued increase of some dimension from the Federal Government.

One of the things that has been suggested, perhaps, is the permit fees at the State level as the real solution to this whole problem, and if the States just increase the permit fees, we wouldn't need to increase Federal grant assistance. Many States do this already and are moving forward and, generally speaking, those permit fees, first of all, are not able to pay the full cost of programs, but, second, they frequently are used for some of the new areas that we have to undertake at the State level.

One example in Maryland is we are undertaking an increased effort at biomonitoring and bioassay of industrial discharges to determine their toxic effects in water bodies. That will be paid for entirely by a permit fee charged against industries in the State of Maryland.

I might note that if you look at what the Governors have requested as an increase in 1985, although it looks significant, if you compare it with 1975, we are still talking about a very substantial decrease of Federal grant money in real terms. We think that that is another reason why this request is perfectly appropriate at this point in time.

I might finally emphasize the issue of enforcement. It seems that as a result of the task force study that I indicated before, it is clear that the major responsibility for enforcement of our State laws over our Federal laws does reside at the State level and there is evidence in some of the other testimony that suggests that not only that is true, but it has also been successful in bringing about environmental restoration.

We do think as you consider the enforcement issue that is appropriate to consider, that an increase in the State grants enables them to carry out the enforcement role more effectively and more efficiently than perhaps may occur if you centralize all of that effort at the Federal/EPA level.

So in concluding, I would say that we urge consideration and support of the Governors' recommendations and we believe doing that will bring about cost-effective and efficient national environmental protection.

I might just close on one final point which is not on behalf of the Governors' Association, but the State of Maryland, and the States in this region endorse the President's request for $10 million in 1985 to be targeted on a cost-sharing basis with the States for restoration and protection of the Chesapeake Bay. We are very appreciative of that request by the President. We believe it is a vital part of what we are trying to do.

Senator MATTINGLY. Thank you.

STATEMENT OF KEN HAAG

Mr. HAAG. I am Ken Haag, and I am here today representing the State and Territorial Air Pollution Program Administrators, or STAPPA, where I currently serve as vice president and chairman of the association's program funding committee.

We appreciate the opportunity to present our views here today on EPA's request for the Federal grants to State and local air agencies under section 105 of the Clean Air Act. I would like to address two major points in my testimony.

First, we believe that your investment of funds in State air pollution control programs brings results. Since the Clean Air Act of 1970, there have been major reductions in the ambient levels of all pollutants we set out to control.

Second, inflation has steadily eroded the purchasing power of our State air grants, which have been funded at the same level over the past several years. This has decreased our ability to provide the level of air quality protection which we believe you and the public expect.

Over the past several years, we have accomplished much. For example, between 1975 and 1982, national average sulfadioxide levels have decreased by 33 percent; national average particulate levels have decreased by 15 percent; carbon monoxide levels decreased 31 percent; ozone levels on a national average have decreased by 18 percent, and these reductions in pollutant levels have brought about with them major health benefits to the American public, but there is much left to be done.

First, the gains that we have made in the past need to be protected. Unless we continue vigorous enforcement of the regulations that we wrote during the 1970's, we will see these air quality gains that we have made slip away.

Second, in addition to the air quality gains we have made, more needs to be done. For example, the 1982 national average carbon monoxide levels were still slightly in excess of a national health-related air quality standard. Also in 1982, average ozone levels were about 10 percent above that same national health-related standard.

Also, new State-run control programs that we have recently developed must be implemented in order to bring about the health protection for these two automotive-related standards. These programs will bring us to that last difficult step toward attainment of the standards and include programs, such as automobile emmisions inspection and maintenance, a large and wide variety of transportation control measures, and control over approximately 20 categories of stationary hydrocarbon sources.

In addition to what has been in maintaining that and continuing in the efforts of the past, we believe that the American public is saying that more needs to be done. They want control programs to deal with emissions that cause acid rain, for example, and we hear on a daily basis that they are demanding control programs that will assure them that they are not being adversely affected by toxic or hazardous air pollutants.

We believe that we can do the job, and we believe our record proves that, but we cannot do the job at funding levels that when adjusted for inflation are comparable to funding that we had over 10 years ago.

State and local governments have been carrying their loads on funding programs. Over the past 10 years, State and local air program funding has more than doubled. While during that same period, Federal program funding has increased by approximately 70 percent, and, in fact, over the past few years, as I noted earlier, Federal funding to the air programs has been stagnant.

In order to assess the effects of that situation, staff has recently conducted a survey and that showed a wide variety of decreases in program activity, including visibility protection, emissions banking, and, notably, air monitoring.

Finally, if we had more money available to fund air programs, the survey shows that that money would go first into control of toxic air emissions; second, into additional compliance determination and enforcement; and, third, into air monitoring.

In conclusion, the members of STAPPA believe that Congress should increase the fiscal year 1985 appropriation of funds under section 105 of the Clean Air Act to $96.4 million as recommended by the National Governors' Association. Our request, incidentally, is almost equivalent to the 1985 funding level for air grants that EPA submitted to OMB.

We appreciate the opportunity to testify here today and express our views on this most important subject.

Senator MATTINGLY. Thank you.

Mr. Malpass.

STATEMENT OF ROBERT E. MALPASS

Mr. MALPASS. I am Robert E. Malpass, member of the board of directors for the Association of State and Territorial Solid Waste Management Officials, better known as ASTSWMO.

Thank you for inviting the association to testify on the USEPA fiscal year 1985 appropriations. Although I serve as the chief of South Carolina's Bureau of Solid and Hazardous Waste Management, I am here today representing ASTSWMO and not the State of South Carolina.

ASTSWMO is a nonprofit professional association representing State program directors responsible for solid waste management, hazardous waste management, and abandoned waste site cleanup activities. Because of the association's membership, ASTSWMO is uniquely qualified to comment on the cost of implementing this Nation's solid and hazardous waste programs and the need for increases in Federal financial assistance to the States for these programs.

ASTSWMO concurs with the National Governors' Association that grants to the States for subtitle C, which are authorized under section 3011 of the Resource Conservation and Recovery Act, should be funded at the maximum allowed for fiscal year 1985. NGA and ASTSWMO supports a 25-percent increase in State hazardous waste grants. A recent poll of State hazardous waste directors conducted on April 6, 1984, found that greater than 75 percent of the 23 States polled could immediately utilize such an increase.

Preliminary results of a States need survey currently being conducted by the association indicate that for fiscal year 1984, the combination of State and Federal funding targeted to the administration of the Federal hazardous waste program in the States comprises only 30 percent of the resources required to adequately meet core Federal hazardous waste program commitments.

According to ASTSWMO's survey, the States would require two to two and one-half times the present available manpower to implement this Nation's hazardous waste program at the level of public and congressional expectations.

Moreover, proposed amendments to the Resource Conservation and Recovery Act now pending before the Senate in the RCRA reauthorization bill will undoubtedly expand the hazardous waste program and its costs during fiscal year 1985.

What will occur without an increase to State hazardous waste program grants? The attached survey pinpoints program areas with shortfalls judged against fiscal year 1984 grant funding. Continued delays in developing permits and enforcing Federal requirements will occur. If staffing for State permitting activities remain at the current fiscal year 1984 level, it could take 20 years to issue all permits instead of the 5 to 7 years we think both Congress and the public are demanding.

There are no additional State funds available to divert into financing the Federal hazardous waste programs. Diverting State resources from other subtitle C activities to deliver more timely enforcement actions and issuance of permits is not feasible. Today, other critical hazardous waste program components are at minimum staffing level and offer no slack to shore up the shortfalls in the current Federal program. The States are already committing resources beyond the 25-percent match required in the Resource Conservation and Recovery Act.

In 15 States representing a cross-section of the Nation, the States' contribution averaged more than 34 percent for fiscal year 1984.

As you know, States must finance all State nonhazardous waste and Superfund activities in addition to augmenting insufficient State program grants for implementation of the Federal hazardous waste requirements. Such demands on State funding sources have resulted in some creative taxing and fee schemes during the last few years.

However, States are now at a point that some have exhausted alternative funding methods and continue to face monetary needs for solid waste programs. Little flexibility exists to pick up the 70-percent shortfall in State staffing levels.

State directors also support the funding of State grants for nonhazardous waste activities authorized under section 4008 of the Resource Conservation and Recovery Act at maximum allowable funding levels for fiscal year 1985. As was described to you in testimony presented last year, the subtitle D component of the Resource Conservation and Recovery Act has been unfunded since fiscal year 1980. During this period of increased public awareness of hazardous waste problems, the larger portion of our nonhazardous, solid waste disposal needs has been ignored at the Federal level. States have tried to make up the difference in needed resources.

In early April, State solid waste directors discussed a national solid waste survey being completed by ASTSWMO that asked the question, "When RCRA subtitle D moneys were cut, what impact did the loss of funding have on your States?"

Survey results showed that 32 States lost 212.5 full-time equivalent positions. Only nine States did not lose any full-time equivalent positions. Areas where losses were greatest included field inspections, technical assistance, enforcement, planning, permitting, and administration. Twenty-six States indicated that they continue to have active solid waste programs while 17 no longer consider their solid waste programs to be active.

State directors urge your subcommittee to resume funding of the nonhazardous waste component of the RCRA program. For your information, I have included with my testimony copies of the preliminary results of ASTSWMO's national solid waste survey and a letter from EPA to Senator Chafee costing out proposed RCRA amendments to subtitle D activities.

As you can see, this major portion of solid waste regulation deserves and will require Federal financial assistance to the States.

The problems resulting from insufficient grant funding have been exascerbated by EPA's grant distribution policies. The use of bonus systems for encouraging the State hazardous waste authorization process and of quarterly grant allotments for extracting specific permit and enforcement deliverables from the States are having the opposite effect. Those distribution policies are preventing States from building programs, attracting competent personnel, and maintaining the morale of the State program personnel who actually do the work of implementing the Federal hazardous waste program.

In addition to the stress caused by such policies, States are constantly threatened that State grants will be diverted away from State personnel to EPA contractors. While contracting has its place in helping States meet RCRA goals, it should not be used at the expense of building sound State programs. A RCRA program built on contractors cannot succeed when one considers that a contractor in fiscal year 1984 costs an average of two to two and one-half times the cost of State program personnel for equivalent skills.

In closing, the Association of State and Territorial Solid Waste Management Officials urges the subcommittee to appropriate State grants funding levels as outlined by the National Governors' Association. A thoughtful and long-range Federal decision to adequately fund State solid and hazardous waste programs will go a long way toward enhancing the quality of life in this country and reducing the long-term cost and public liability of today's inadequate waste management programs.

Thank you, Mr. Chairman.

Senator MATTINGLY. I would like to thank you all for highlighting the importance of the EPA State grant program. It is my understanding Chairman Garn is currently exploring the possibility of augmenting the State EPA program.

STATEMENT OF ROBBIE SAVAGE

Ms. SAVAGE. I am not Reginald LaRosa, first.

Senator MATTINGLY. I knew that.

Ms. SAVAGE. I have been called Mr. Savage in this committee before. Mr. LaRosa is in Vermont. The State legislature is dealing with bills that directly affect his program and he felt he needed to stay with the State and visit with the State legislature.

I am Robbie Savage, executive director of the Association of State and Interstate Water Pollution Control Administrators (ASIWTCA). The members of our association are those State officials that on a daily basis manage the clean water program.

The association has come before this committee many times to testify and to discuss with you the fiscal aspects of the program and calling for enhancement to the partnership, the State level partnership of which we all speak so lovingly.

The subcommittee is familiar with the issues of delegation and the responsibilities at the State level, so I won't reiterate those issues. I would like to highlight for you the fact the delegation, as established in law, is, in fact, working. While some on the shores of the Potomac tend to forget, the States do the bulk of the work, specifically in water quality monitoring, in water quality standard setting and permit issuance and compliance, and enforcement activities.

On several occasions, Mr. Chairman, we came before this committee and other committees in the Congress to discuss the clean water program. You put before us many questions that we and EPA could not answer. This was not only embarrassing for the State directors, but it was also taken by our association as a challenge.

The association 18 months ago took on a project to document the status of the clean water program in the last 10 years. Leonard Ledbetter of the Environmental Protection Agency in Georgia cochaired with me on the project. We recently completed our report called, "America's Clean Water, the States' Evaluation of Progress."

Basically, what we learned in this exercise was of the $56.2 billion that have been spent in this program, 62 percent has come from the Federal Government; that is, $34.9 billion in the form of the construction grants program; 27 percent comes from local government as their matching share; that is $14.9 billion; 9 percent, or $5 billion, comes from the State, which is not a Federal requirement.

This is money that States have added either for grant or loan programs or assistance to local governments. And $1.4 billion, or 2 percent, comes from EPA and other forms of Federal assistance.

Our knowledge, basically, for all this money has increased tremendously. When we talk about the program in terms of $56.2 billion, that is an incredible amount of money, but our analysis shows that $260 per capita over a 10-year period has produced the kind of quality improvements that I would like to discuss with your.

In 1972, when our data base was between 1972 and 1982, 54 percent of the streams had unknown quality. In 1982, because of the concerted efforts on the parts of State and local and Federal governments, only 9 percent of our streams are we unfamiliar with the data. What we found, of the Nation's 1.8 million stream-miles, 58 percent are generally free from known water pollution problems. The remaining 24 percent are what we discuss in our report. Those are the areas which we determined to be impacted by industrial or human activity.

Pollution basically then is decreasing—47,000 having improved in water quality; 296,000 miles have generally maintained their quality; and, regrettably, 11,000 miles have, in fact, been degraded.

Translated, that is 64 percent of the Nation's waters fully support the uses designated by the law; 22 percent partially support, or we are coming close; 5 percent do not support their uses at this time. Translate that then into compliance.

In 1972, municipal compliance was 33 percent; in 1982, it was 79 percent. Industrial compliance was 36 percent; in 1982, 78 percent. It is our understanding that this committee is interested in directing additional funding toward compliance and enforcement activities. Thirty-eight States currently manage the enforcement program and the permitting program. Seventy percent then of the work being done by the States, we would suggest that if, in fact, money is going to be targeted toward enforcement activities, that the position of the Nation's Governors be taken into consideration and State grants be raised accordingly.

What we found in our analysis, Mr. Chairman, is we still have some work to do and our future issues deal basically with municipal waste water treatment. We put a lot of money in this program, but there is still a lot to do. Municipal compliance is still our biggest remaining problem.

Next would be elimination of toxicity, ground water protection, and nonpoint sources. We were pleased with the results of the effort that we undertook with USEPA in our clean water program and EPA has asked us to do another project specifically dealing with nonpoint sources. So we will be coming back before you, Mr. Chairman, in about 2 years, to report to you on the findings of that report of that effort. However, we will be intermittently providing information to this committee and other Members of the Congress.

I would like to just highlight the positions of the association and the feelings of the States as they relate to funding.

We very much support the Nation's Governors in a 10-percent increase in that program, though we know in our discussions during the 1981 amendments that we could use significantly more with EPA's needs survey at $118 billion.

We also understand fiscal constraints Congress is working with and support the $2.4 billion appropriation. We are concerned, Mr. Chairman, with the ground water strategy currently being developed by the USEPA. We support the need for control of ground water pollution. We have concerns with the way EPA is suggesting we go about funding this program, and that is to take moneys away from the solid waste program under the State grant programs. You can't spend that money twice.

If we are going to implement the ground water strategy, what are we going to do with the permit program, enforcement activities, pretreatment, and other various activities the EPA requires the States to manage?

So we would suggest that this committee discuss with EPA the method of funding of ground water and provide for adequate funding of this very important program.

In closing, Mr. Chairman, the States very much appreciate the leadership this committee is providing in State grants program. The State grants have been under attack for many years by the Administration, by the Office of Management and Budget, and this committee has been very faithful and supportive of the States in this effort. We are very appreciative.

Senator MATTINGLY. Thank you very much. To all of you, the subcommittee commends the work—especially the Association of State and Interstate Water Pollution Control Administrators—you have done on documenting the progress we made and the action we still need to take in the area of clean water. We look forward to a continuation of those efforts.

I thank you all very much for your statements and your full statements will be made a part of the record. I am certain you will be hearing from us.

[The statements follow:]

STATEMENT OF WILLIAM EICHBAUM, ASSISTANT SECRETARY, MARYLAND DEPARTMENT OF HEALTH AND MENTAL HYGIENE, ON BEHALF OF THE NATIONAL GOVERNORS' ASSOCIATION COMMITTEE ON ENERGY AND ENVIRONMENT

Mr. Chairman, members of the Subcommittee, I appreciate the opportunity to appear before you this morning on behalf of Christopher Bond, Chairman of the National Governors' Association Committee on Energy and Environment. With me today are representatives of the associations of state air, water, and hazardous waste management officials. They will provide you with an assessment of what the proposed EPA budget means for their specific programs. But I would like to address the EPA's state program budget in broad terms, and express the governors' strong recommendation that the funds made available to state agencies be increased about 12.5 percent in aggregate over fiscal 1984 levels.

The governors understand the dimensions of the budget problems facing the country today, and have wrestled with recommendations for reducing the federal deficit. At their recent winter meeting, the governors approved a budget policy document advocating increases less than the rate of inflation for many important programs, including many programs which directly assist in delivering services to their citizens. The governors did, however, recommend a real (inflation adjusted) increase in support for state environmental management grants, with funds for air, water quality, and drinking water going up by 10 percent each and funds for hazardous waste going up by 25 percent over fiscal 1984 levels. This recommendation reflects the governors' belief that public health and environmental protection are among the most important priorities of government.

In making your decisions about the level of EPA support in the coming fiscal year, it is important to keep several facts in perspective. Perhaps most important, state environmental agencies are the delivery arm for most of the nation's environmental protection programs. It is the states which actually implement environmental programs, and in the words of the EPA's Task Force on Federal-State Relations, "If the states do not succeed out on the front lines, EPA cannot succeed." The significant point is that EPA's state program grants do not represent grants in the usual use of that term. Rather, they represent the purchase of environmental protection services in a form and manner mandated by the federal government. We believe these state grants represent the most efficient and cost effective way of delivering environmental protection and protecting public health.

A second important fact is that the level of federal support for state programs has declined significantly in recent years. The Congressional Budget Office estimates that the Administration's fiscal 1985 request for state programs represents a 61 percent decrease in real terms since 1975. During that time period, we have been asked to implement several new programs including hazardous waste regulation, toxic waste cleanup, auto inspection and maintenance and enforcement of the Safe Drinking Water Act - on top of the existing understaffed programs.

In the past several years, we have made management improvements in our programs, and any further cuts would require major program reductions. In the governors' view, we simply cannot absorb any further reductions without endangering these programs. I believe that in the face of continuing reductions in federal support, states will be forced to reduce efforts; interstate consistency and program quality will suffer; and innovative approaches such as agricultural cost-sharing for controlling non-point sources of pollution, which are more expensive for states but much less expensive for business, will be shelved.

It is also important to reject the notion that states can make up for reductions in federal support. The simple truth is that they cannot. States have been forced to cut public services and increase taxes just to balance their budgets. They cannot be expected to go beyond their current efforts to fill critical gaps left by reduced federal funding. Furthermore, cuts in federal support send signals to state legislatures that they don't need to do so.

The preliminary results of a survey conducted by NGA and the National Association of State Budget Officers show that aggregate state budget surpluses in fiscal 1984 and fiscal 1985 will be extremely low -- less than 2 percent of total state expenditures. This is considerably below the 5 percent recommended by Wall

Street financiers. In 1983, 31 states increased taxes, 41 states cut or limited expenditures, 19 gave employees no cost of living raises, and 23 cut the size of their work force. These measures combined with the present economic recovery help states make up for prior reductions in federal funding, but the fiscal outlook for most states remains guarded. The governors also believe that permit fees can account for only a small part of environmental program funding. In the majority of states that collect permit fees for environmental programs, the revenues are deposited in the general fund.

In most states, it has historically been considered good public policy to place such revenues in the general fund to avoid the appearance of conflict of interest between regulators and pollution sources. According to a 1982 study of state environmental programs conducted by NGA, about 21 states and territories charge for air quality permits, but in only 10 are the funds available to the permitting agency. While 22 states and territories have water quality permit fees, only 9 states make them available to the permitting agency; and only 7 hazardous waste agencies collect and keep permit fees even though 18 agencies collect them. In addition, permit fees generally account for less than 10 percent of an agency's program funds.

Finally, I believe it is very important to keep in mind the number of new environmental protection issues that will need attention in the future, including ground water protection, controlling nonpoint sources of water pollutants, acid rain, and toxics in all environmental media. Controlling contaminants in groundwater, especially in drinking water supplies, will probably be a major responsibility for the EPA and state drinking water programs in the near future. Many of these new program initiatives are not currently funded. In the absence of additional federal support beyond current levels, most states simply will not be able to meet these new challenges.

Mr. Chairman, I know your task is a difficult one. The governors, too, must wrestle with these difficult budget decisions. But our sense is very strong that increases above fiscal 1984 levels are needed for environmental management grants. We will need another two decades of sustained work to achieve air quality standards, reduce acid rain, achieve water quality standards, clean up thousands of hazardous waste sites, and reduce toxic discharges into our air and water and on our land. We hope you will provide the 12.5 percent increase above fiscal 1984 levels we believe is essential to take another step to adequately protect the environment and public health. ave attached a copy of the governors' recent resolution on environmental program funding and ask that it be included in the record with my statement.

I have attached a copy of the governors' recent resolution on environmental program funding and ask that it be included in the record with my statement.

Committee Resolution
on
Environmental Funding

(consistent with policy D-41 and policy A-14)

Proper cost-effective implementation of federal and state programs for protection of the environment require adequate funding for the administration of those programs. The Governors also believe that the federal government is obligated to provide its fair share of the funds to implement environmental programs which are carried out primarily by states, are in the national interest and, in many cases, fulfill federal law.

Consistent with the NGA position on the federal budget which indicates that any increases in non-defense discretionary spending should "...concentrate on the investment components of the budget, including grants for infrastructure, major environment protections, education and job training, and federal initiatives for basic research and development," the Governors recommend the following FY 1985 funding for EPA grant programs:

		(Millions of Dollars)
Environmental Management Grants		
Air quality (105		$ 96.4
Water quality (106)		59.6
Clean Lakes Program		5.0
Drinking Water:		
Public Water Systems		30.3
Underground Injection Control		8.3
Hazardous Waste		58.8
Pesticides:		
Enforcement		9.0
Training		2.2
Toxics Enforcement Grants		0.5
	SUBTOTAL	$270.1
Wastewater Treatment Grants		
(construction monies)		$3,000.00*

The recommended funding of environmental management grants at $270.2 million represents a $32.5 million increase over the President's FY-85 request. The recommendation is needed to support the rapidly expanding federally mandated programs for environmental protection which have occurred in the last few years.

Resolution Adopted by Committee on Energy and Environment, February 27, 1984

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*Policy position (D-26) adopted August 1983

STATEMENT OF KENNETH HAGG, MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL QUALITY ENGINEERING, ON BEHALF OF THE STATE AND TERRITORIAL AIR POLLUTION PROGRAM ADMINISTRATORS

Mr. Chairman and members of the Committee, my name is Kenneth Hagg and I am the Director of the Division of Air Quality Control in the Massachusetts Department of Environmental Quality Engineering. I am here today representing the State and Territorial Air Pollution Program Administrators (STAPPA) where I currently serve as Vice-President and Chairman of the association's Program Funding Committee. STAPPA is the national association of state air pollution control agencies whose members have been granted "primary responsibility" under the Clean Air Act for protecting the public health and welfare from the adverse effects of air pollution. We appreciate this opportunity to present our views on the Environmental Protection Agency's FY1985 budget request for federal air pollution control grants to state and local agencies under Section 105 of the Clean Air Act.

I would like to address two points in my testimony. First, your investment of funds in state air pollution control programs brings results. Since the Clean Air Act of 1970, there have been major reductions in the ambient levels of all the pollutants which we have set out to control.

Second, inflation has steadily eroded the purchasing power of the state air grants, which have been funded at the same level over the past several years. This has decreased our ability to provide the level of air quality protection which Congress and the public expect. In fact, the public is now demanding control of health and environmental threats that are not now dealt with (or are inadequately dealt with) in the present Clean Air Act. We simply cannot cope with continuing our existing responsibilities and at the same time meeting the public's new expectations while our federal budget, when adjusted for inflation, has decreased by 24 percent since 1979.

I would like to commend the committee for the actions it has taken in the past two years in adding a significant amount above the Administration's request for state air grants. The message that you have sent apparently has been received since the Administration's request for FY1985 is $87.7 million — level funding from last year. However, the facts that face us this year clearly call for additional funding.

In your consideration of the proper appropriations level for state air grants for FY1985, it might be useful to reflect upon what state and local governments actually have accomplished over the past decade with the state and federal money that has been devoted to air pollution control activities.

During the 1970's, air pollution control activities were devoted almost solely to the control of sulfur dioxide and particulates. At the start of the decade, the levels of these pollutants were generally well above the national health-related air quality standards. We have made significant progress, however. EPA's 1982 National Air Quality and Emissions Trend Report, which analyzes data from state-operated air monitors, documents this progress. For example, sulfur dioxide levels measured at 351 sites across the country decreased 33 percent between 1975 and 1982, and currently, the average sulfur dioxide level is well below the health-related air quality standard.

The story is similar for particulates. Annual average particulate levels measured at 1,768 sites decreased by 15 percent between 1975 and 1982. Here again, while there are a few trouble spots remaining, on average the particulate levels are well below the national standard. Clearly, we have been successful in meeting the goals set by Congress in 1970 for these pollutants.

Turning to automotive related pollutants, the picture is somewhat different. Most state and local air pollution control programs began working in earnest on these pollutants in the late 1970's. For carbon monoxide, levels at 196 sites have decreased by 31 percent between 1975 and 1982. This impressive record is due mainly to the federal motor vehicle emission control requirements. However, while carbon monoxide levels have been reduced substantially, the average national level still remains slightly above the health-related national standard. More needs to be done. While we can expect some further reductions from the federal motor vehicle emission control program, we now must focus on state motor vehicle emission inspection and maintenance programs. Also, we must implement a number of transportation control measures that have been adopted recently. It will only be through a combination of these efforts – continuing controls on new motor vehicles, ensuring that in-use vehicles emit as little pollution as possible, and averting excessive future increases in vehicle miles traveled – will we ensure that we attain and maintain the carbon monoxide standard nationwide.

For ozone, the picture is also one of progress. Between 1975 and 1982 ozone levels decreased by 18 percent. However, the national average of 193 sites in 1982 was almost 10 percent above the national health-related standard. The 1982 average exceedance rate of slightly more than 8 times per year is well in excess of what the air quality standard allows. While this is a 50 percent improvement from 1975, there is much work left to be done. State and local programs must continue to carry out the programs which led to the reduction through 1982, but in addition, implement several new programs in order to attain the air quality standard within the next few years. One of these new programs includes control of over 20 stationary source categories of hydrocarbon emissions. This control program will be very complex due to the numerous types of industrial processes, chemicals involved, and alternatives for controls that are available. This complexity will be compounded by the introduction of federal initiatives, such as the emission bubble, which will allow industry to achieve the necessary amount of control at lower costs.

Looking to the future, we see our job as having three parts: (1) continuing vigorous enforcement of the control requirements that brought about the past significant reductions in sulfur dioxide, particulates, and the automotive related pollutants; (2) enforcing new pollution control requirements that will facilitate attainment of national standards for the automotive-related pollutants; and (3) responding to the public demand for action on air pollution problems not adequately addressed in national environmental legislation. Foremost of these problems are toxic air pollutants and acid rain.

State and local air agencies, however, currently lack sufficient funds to adequately carry out these responsibilities. In fact, we are attempting to implement today's programs with a funding level, adjusted for inflation, that is equal to what was available in FY1972. Unless resources are increased, we are fearful that the nation's air quality will be adversely affected. In the past two years alone, the air quality in four states has deteriorated from attainment to nonattainment, due, in part, to a steady reduction of funds for implementing existing clean air requirements. Four additional states could fall in this category.

In order to determine state air program needs and activities, STAPPA recently surveyed its members. According to that survey, which is attached to my testimony, 29 percent of the 34 states responding reported decreased activity in air monitoring in FY1984. Thirty-three percent reduced activity on visibility protection. Approximately 20 percent decreased activity on emissions banking and trading and on the development of State Implementation Plans for lead. States also reported that 47 percent of the approximately 1,900 monitors for sulfur dioxide, nitrogen dioxide, and ozone are in fair to poor condition. In FY1985, 19 percent of these monitors will need to be replaced and an additional 32 percent will need to be replaced before 1990.

If additional resources were made available this year, state agencies indicated that they would spend them in three existing program areas: (1) toxics emissions control (in states that already have programs in place), (2) compliance determination and enforcement, and (3) air quality monitoring. States also indicated that they would expend funds in several new air quality programs. Air toxics control remains the highest priority among the states. States estimate that first-year program costs for developing and implementing their air toxics control programs would run over $12 million per year, with an additional annual maintenance exceeding $10 million.

Acid rain control is another new priority of the states. States estimate that they will need over $10 million this year, and about $7 million annually thereafter, to begin developing the necessary emissions inventories, monitoring networks, and research and control strategies to combat the adverse effects of acid precipitation. This is a necessary and cost-effective expenditure for a program whose costs are expected to run as high as $40 billion.

Finally, about one-third of the states indicated that they need additional resources to develop and implement programs to control emissions from wood-burning activities. The states estimate that costs in the first year could exceed $7 million, with recurring costs as high as $4 million per year.

States simply can no longer compensate for reduced federal funding. According to our survey, 93 percent responded they have exhausted all available avenues for additional funding. Over the past few years, states have reduced their staffs, improved management techniques, and in many instances, adopted alternative funding schemes such as permit fees. With respect to fees, it is noteworthy that only about 25 percent of the states that collect permit fees are able to use the revenues directly for air pollution control. Moreover, the fees that are used directly for air pollution control account for less than 30 percent of total program costs.

In conclusion, the members of STAPPA believe that Congress should increase the FY 1985 appropriation of funds under Section 105 of the Clean Air Act from the EPA request of $87.7 million to $96.4 million, as recommended by the National Governors' Association. Our request, incidentally, is almost equivalent to the FY1985 funding level for air grants that EPA submitted to the Office of Management and Budget. STAPPA believes that $96.4 million will go a long way toward providing sufficient resources for state and local air agencies to implement air quality programs effectively.

Thank you for this opportunity to testify. I will be happy to answer any of your questions.

STATUS OF STATE AIR POLLUTION CONTROL PROGRAMS

A REPORT PREPARED BY STATE AND TERRITORIAL AIR POLLUTION PROGRAM ADMINISTRATORS

EXECUTIVE SUMMARY

Real funding for state air pollution control programs has decreased while responsiblities have increased since the initiation of new requirements contained in the Clean Air Act Amendments of 1977. States cannot make up for the lost purchasing power caused by decreased real federal funding. Permit fees are not contributing significantly to state budgets. Activities which are most costly to implement, such as air monitoring, or have the least air quality benefits, such as emissions banking and trading programs, have seen decreased activity. Significant new funding is needed to maintain air programs, even before consideration of new activities such as toxic emissions control programs. The combination of shrinking real funding and expanding responsibilities is having a devastating effect on the states' abilities to protect public health and the environment.

INTRODUCTION

The federal Clean Air Act, enacted in 1970 and amended in 1977, requires the states to develop and implement air pollution control programs under federal guidance and supervision. The states' efforts have been supported by state funds and by a matching grant from the U.S. Environmental Protection Agency (EPA), authorized under section 105 of the Clean Air Act. The State and Territorial Air Pollution Program Administrators (STAPPA), the national association of state air pollution control officials, is keenly interested in ensuring that state and local agencies have adequate resources to implement their clean air responsibilities -- the protection of public health and the environment. For this reason, STAPPA recently conducted a survey of state air pollution control agencies addressing funding and program demands historically, and in particular for FY84 and FY85. The Administration has requested level funding ($87.7 million) for FY85. If this is accepted by Congress, funding at the FY81 level will be continued into FY85. The intent of the survey was to document the effects of static funding upon growing state air pollution control programs and to document the need for increased federal funding. Thirty-four of the fifty states responded to the survey.

FUNDING

FUNDING TRENDS

Total funding for state air programs in real dollars has steadily decreased since 1979 -- between FY79 and FY84, available funding, after adjustment for inflation, declined by 13%. Federal funding in real dollars has decreased, even though actual funding from federal sources increased, due to inflation (see Figure 1).

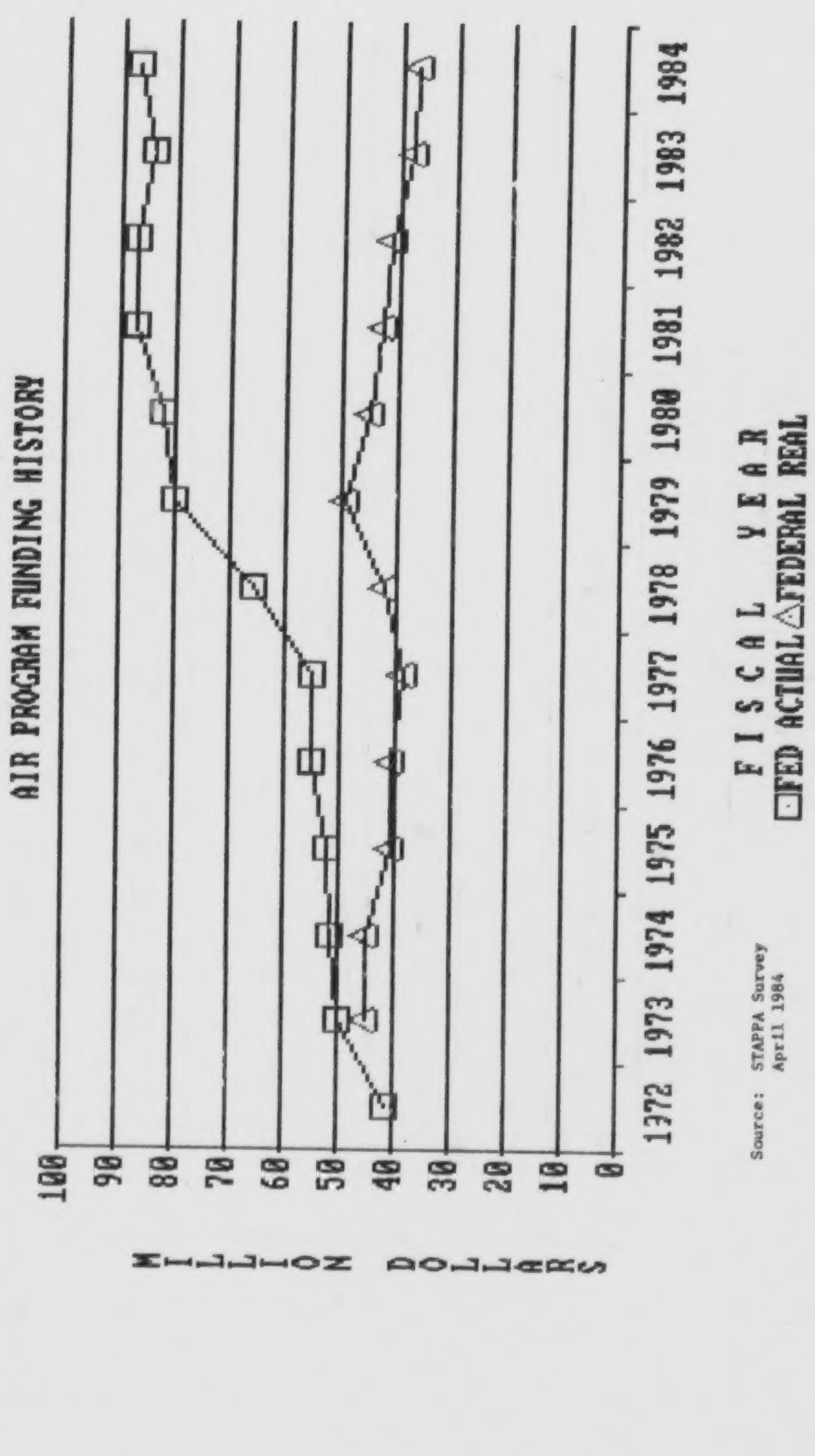
Federal funding in actual dollars increased between FY72 and FY 81 but remained level for the last four years (see Figure 2). Non-federal funding in actual dollars has increased steadily since FY72. But total real dollars, adjusted for inflation, have decreased since FY79 -- between FY79 and FY84 real federal funding decreased by 24% and real non-federal funding decreased by 6%.

Table 1, which lists federal and non-federal contributions to state and local air programs, clearly depicts the discrepancy between actual and real funding. Between FY82 and FY84, total real funding sources available to state programs decreased by approximately $6 million in spite of a $12 million actual increase in non-federal funding.

Obviously, this is an unsatisfactory condition: air pollution control agencies are attempting to implement programs in FY84 with a funding level less than FY72, in spite of additional requirements imposed by the 1977 Clean Air Act Amendments, as well as requirements delegated to state and local agencies by EPA.

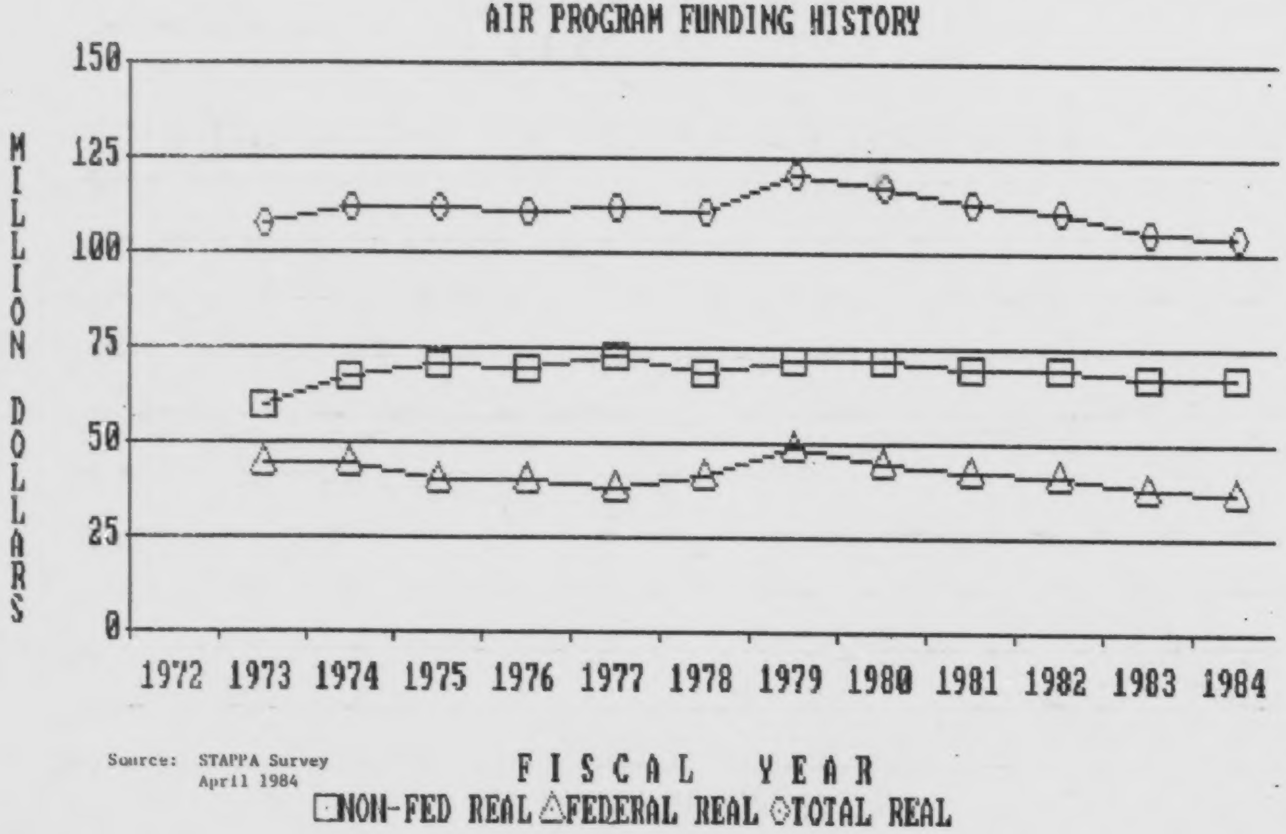
The proposed level funding for FY85 will continue to widen the gap between program demands and implementation ability.

FIGURE 1



Source: STAPPA Survey
April 1984

FIGURE 2



Source: STAPPA Survey
April 1984

Table 1

FUNDING FOR STATE AND LOCAL AIR POLLUTION CONTROL PROGRAMS
(Millions $)

FY	Purchasing Power*	Non-Federal		Federal		Total		% Non-Federal
		Actual	Real**	Actual	Real**	Actual	Real**	
72	1.00	55.0		42.0		97.0		57
73	.95	63.1	59.9	50.7	45.2	113.8	108.1	55
74	.88	76.7	67.5	51.5	45.3	128.2	112.8	60
75	.78	91.2	71.1	52.5	41.2	143.7	112.1	53
76	.74	94.7	70.1	55.3	40.9	150.0	111.0	63
77	.70	104.8	73.4	55.6	38.9	160.4	112.3	65
78	.64	107.9	69.1	66.0	42.2	173.9	111.3	62
79	.62	116.3	72.1	80.0	49.6	196.3	121.7	59
80	.55	132.1	72.7	82.8	45.5	214.9	118.2	61
81	.49	143.9	70.5	87.7	43.0	231.6	113.5	62
82	.48	144.9	69.6	87.7	42.1	232.6	111.6	63
83	.45***	151.0	68.0	84.7	38.1	234.7	105.5	65
84	.43***	157.2	67.6	87.7	37.7	244.9	105.3	64

* Purchasing power of the dollar-- using the 1972 dollar as being worth $1.00 and each following year's dollar purchasing power being rated against the 1972 dollar.
Source: U.S. Department of Commerce

** Real Funding: Actual dollars X purchasing power.

*** Estimates. Source: Data Resource Incorporated

Actual Funding Source: U.S. Environmental Protection Agency/Office of Air Quality Planning and Standards.

STATES' ABILITY TO REPLACE LOST PURCHASING POWER OF FEDERAL FUNDS

States will be unable to fill the gap created by decreased real federal funding -- 93% of the states surveyed stated that they could definitely not provide the extra funds. The remaining states, although hopeful they could acquire some of the funding, were unable to provide specifics on how to accomplish this.

ADDITIONAL FUNDING PROBLEMS

While attempting to meet these additional requirements on reduced real federal funding, state air programs are experiencing further drains on their budgets from a variety of sources such as salaries, replacement of equipment such as monitors, and local agencies returning program responsibilities to states. For example:

- State salaries will increase 13% between FY83 and FY85.
- Of the approximately 1,865 monitors for sulfur dioxide, nitrogen dioxide, and ozone (some of the most costly monitors to purchase), 47% are in fair to poor condition. In FY85, 19% of the monitors will need replacement, and an additional 32% will need replacement before 1990.

- Of the states which have air programs managed in part by local authorities, 23% had local program responsibilities revert to the state during FY84, or the programs will revert in FY85.

ROLE OF PERMIT FEES

The collection of permit fees by state air programs has not produced significant revenue. Of the 58% of states that reported collecting permit fees, only 45% receive the revenue. This revenue represents 30% of these states' total program funding, yet, on an average, the cost to collect fees amounts to 2.5% of their program budgets.

PROGRAMS

EXISTING PROGRAMS

In FY84, the following existing programs saw the largest increase in activity:

- Toxic Emissions
- Auto Emission Inspection and Maintenance
- National Emission Standards for Hazardous Air Pollutants (NESHAPS)
- Ozone State Implementation Plan (SIP)
- Sulfur Dioxide State Implementation Plan (SIP)

In FY84, the following existing programs saw the largest decrease in activity:

- Visibility protection: 33% of the states decreased activity
- Air Quality Monitoring: 29% of the states decreased activity
- Emissions Banking: 24% of the states decreased activity
- Emissions Trading: 22% of the states decreased activity
- Lead State Implementation Plan (SIP): 19% of the states decreased activity

These programs represent the most costly to implement and/or demonstrate the least benefits to air quality. If activity level in key programs, such as air quality monitoring, is to be maintained, these programs need adequate funding.

In FY85, given a 15% increase in federal funding, activity would increase on the following existing programs:

- Toxic Emissions: 90% of the states would increase activity
- Compliance Determination: 50% of the states would increase activity
- Total Suspended Particulate State Implementation Plan (SIP) (conversion to new standard): 46% of the states would increase activity
- Air Quality Monitoring: 42% of the states would increase activity
- Enforcement: 34% of the states would increase activity

(Table 2 depicts Program Activity of State Air Pollution Control Programs.)

Table 2

STATE AIR POLLUTION CONTROL PROGRAM ACTIVITY

PROGRAM	ACTIVITY CHANGE BETWEEN FY83 and FY84 (% of States)			ESTIMATED INCREASED ACTIVITY BETWEEN FY84 and FY85* (% of States) *Given a 15% Increase in Federal Funding
	Decreased	Maintained	Increased	
Air Quality Monitoring	29	71		42
Compliance Determination	16	69	15	50
Enforcement	6	84	10	34
General Permitting	10	80	10	13
Toxic Emissions	4	39	57	90
Bubbles	17	70	13	24
Emissions Banking	24	62	14	17
Emissions Trading	22	65	13	16
Automobile Inspection & Maintenance	8	71	21	21
New Source Performance Standards	3	84	13	6
NESHAPS		80	20	17
Control Technique Guidelines	8	80	12	12
New Source Review, (non-attainment)		93	7	8
Visibility	33	57	10	30
Sulfur Dioxide SIP	12	72	16	13
Total Suspended Particulate SIP	11	78	11	46
Nitrogen Dioxide SIP	12	83	5	6
Carbon Monoxide SIP	4	84	12	30
Ozone SIP		81	19	30
Lead SIP	19	66	15	3

SOURCE: STAPPA Survey
APRIL 1984

NON-ATTAINMENT

Thirteen percent of the states which previously were in attainment, currently have non-attainment areas. Another 13% of the states report a potential for current attainment areas becoming non-attainment.

NEW PROGRAMS

If funding were available, most states would fund new programs in toxic emissions, acid deposition, and woodburning, in that order of priority.

Toxic Emissions: 78% of the states reported their highest priority is the development and implementation of an air toxics program.

Cost: The estimate for the first year's development and implementation costs for 50 states is $12.5 million. Annual maintenance would cost $10.8 million.

Acid Deposition: 38% of the states listed acid deposition as a priority program if funding were available.

Cost: The first year's development and implementation, including studies, control strategies, and monitoring for 50 states is estimated at $10.6 million. Annual maintenance would cost $6.6 million.

Wood Burning: 34% of the states listed woodburning as a priority program.

Cost: The estimate of costs for development and implementation in the first year for 50 states is $7.1 million. Annual maintenance would cost $3.9 million.

Significant new funding is necessary to maintain air program acitivity levels before considering increasing activity in existing and new programs.

CONCLUSIONS

Real funding for state air pollution control programs has decreased while responsibilities have increased since the initiation of new requirements contained in the Clean Air Act Amendments of 1977.

- Total funding available to state air pollution control programs, after adjustment for inflation, has declined by 13% between FY79 and FY84. During the same time period, real federal funding declined 24% and real non-federal funding declined by 6%.

States are unable to carry a further funding load caused by decreased real federal funding.

- 93% of the states surveyed cannot make up for lost purchasing power caused by decreased real federal funds.

While attempting to meet additional requirements, state air programs are experiencing further drains on their budgets.

- Salary costs will increase 13% between FY83 and FY85.
- 47% of the most costly air monitors are in fair to poor condition and over half will need replacement in the next five years.

- 23% of the states responding to the survey had (in FY84 or will have in FY85) responsibilities, previously carried out by local agencies, returned to the state.

Permit fees, while collected by over half of the states responding to the survey, are not contributing significantly to state budgets.

- Only about a quarter of the states surveyed directly receive revenue to fund program activities. This revenue accounts for only 30% of these states' total program funding.

Programs which are costly to implement and/or have the least air quality benefits have seen significantly decreased activity.

- Emissions banking and trading programs which could lead to less costly control requirements on industry were cut back in 20% of the states. (Many states never had sufficient funds to begin these programs.)
- Air monitoring, one of the most necessary and costly activities, was cut back in 29% of the states.

If states receive additional resources, existing programs which would first benefit include:

- Toxic emissions control (in states that already have functioning programs).
- Compliance determination and enforcement
- Air quality monitoring.

Beyond shoring up existing program areas, states would expend new funds in the following new activities.

- Toxic emissions control (where programs do not now exist or are not fully developed).
- Acid deposition data gathering and control planning.

Significant new funding is necessary to maintain air program activitiy levels before considering increasing activity in existing and new programs.

The combination of shrinking real funding and expanding responsibilities is having a devastating effect on the states' abilities to protect public health and the environment.

- 13% of the states responding to the survey which previously were in attainment, currently have non-attainment areas. Another 13% report a potential for current attainment areas becoming non-attainment.

STATEMENT OF ROBERT E. MALPASS, CHIEF, BUREAU OF SOLID AND HAZARDOUS MANAGEMENT SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL, ON BEHALF OF THE ASSOCIATION OF STATE AND TERRITORIAL SOLID WASTE MANAGEMENT OFFICIALS

Good morning Mr. Chairman and members of the Subcommittee, I am Robert E. Malpass, member of the Board of Directors for the Association of State and Territorial Solid Waste Management Officials (ASTSWMO). Thank you for inviting the Association to testify on the USEPA FY85 Appropriations. Although I serve as the Chief of South Carolina's Bureau of Solid and Hazardous Waste Management, I am here today representing ASTSWMO and not the State of South Carolina.

ASTSWMO is a non-profit professional association representing State Program Directors responsible for solid waste management, hazardous waste management and abandoned waste site cleanup activities. Because of the Association's membership, ASTSWMO is uniquely qualified to comment on the cost of implementing this nation's solid and hazardous waste programs and the need for increases in federal financial assistance to the States for these programs.

ASTSWMO concurs with the National Governors' Association that grants to the States for Subtitle C (Section 3011 of the Resource Conservation and Recovery Act) should be funded at the maximum allowed for their FY85 authorization. NGA and ASTSWMO supports a 25% increase in State hazardous waste grants. A poll of State Hazardous Waste Directors conducted on April 6, 1984 found that greater than 75% of the 23 States polled could immediately utilize such an increase.

Preliminary results of a "States' Needs" survey currently being conducted by the Association indicate that for FY84, the combination of State and Federal funding targeted to administration of the federal hazardous waste program in the States comprises only 30% of the resources required to adequately meet core federal hazardous waste program requirements. According to ASTSWMO's survey, the States would require two to two and one-half times the present available manpower to implement this nation's hazardous waste program at the level of Public and Congressional expectations. Moreover, proposed amendments to the Resource Conservation and Recovery Act, now pending in the Senate, will undoubtedly expand the hazardous waste program and its costs during FY85.

What will occur without an increase to State hazardous waste program grants? The attached survey pinpoints program areas with shortfalls judged against FY84 grant funding. Continued delays in developing permits and enforcing federal requirements will occur. For staffing for State permitting activities remains at the current FY84 level, it could take to 20 years to issue all permits, instead of the five to seven years we think that both Congress and the Public are demanding.

There are no additional State funds available to divert into financing the federal hazardous waste program. Diverting State resources from other Subtitle C activities to deliver more timely enforcement actions and issuance of permits is not feasible. Today, other critical hazardous waste program components are at minimum staffing levels and offer no "slack" to shore up the shortfalls in the current federal program. The States are already committing resources beyond the 25% State match required in RCRA. In 15 States representing a cross section of the nation, the States' contribution averaged more than 34% for FY84.

As you know, States must finance all State non-hazardous waste and Superfund activities in addition to augmenting insufficient State program grants for implementation of the federal hazardous waste requirements. Such demands on State funding sources have resulted in some creative taxing and fee schemes during the last few years. However, States are now at a point that some have exhausted alternative funding methods and continue to face monetary needs for solid waste programs. Little flexibility exists to pick up the 70% shortfall in State staffing levels.

State Directors also support the funding of State grants for non-hazardous waste activities (Section 4008(a)(2)) at maximum authorized funding levels for FY85. As was described to you in testimony presented last year, the Subtitle D component of the Resource Conservation and Recovery Act has been unfunded since FY80. During this period of increased Public awareness of hazardous waste problems, the larger portion of our solid waste disposal needs (non-hazardous waste) has been ignored at the federal level. State have tried to make up the difference in needed resources. In early April, State Solid Waste Directors discussed a National Solid Waste Survey being completed by ASTSWMO that asked the question "when RCRA Subtitle D monies were cut, what impact did the loss of funding have on your State?" Survey results show that thirty-two States lost 212.5 FTE positions. Only nine States did not lose any FTE positions. Areas where losses were greatest included (in order of number of States which lost positions in the specific area) field inspections, technical assistance, enforcement, planning, permitting, and administration. Twenty-six States indicated that they continue to have an active solid waste program, while seventeen no longer consider their solid waste program to be "active."

State Directors urge your Subcommittee to resume funding of the non-hazardous waste component of the RCRA program. For your information, I have included with my testimony copies of the preliminary results of ASTSWMO's National Solid Waste Survey and a letter from USEPA to Senator Chafee costing out proposed RCRA amendments to Subtitle D activities. As you can see, this major portion of solid waste regulation deserves and will require federal financial assistance to the States.

The problems resulting from insufficient State grant funding have been exacerbated by USPEA's grant distribution policies. The use of bonus systems for encouraging the State hazardous waste authorization process and of quarterly grant allotments for extracting specific permit and enforcement deliverables from States are having the opposite effect. These distribution policies are preventing States from building programs, attracting competent personnel, and maintaining the morale of the State program personnel who actually do the work of implementing the federal solid waste program. In addition to the stress caused by such policies, States are constantly threatened that State grants will be diverted away from State personnel to EPA contractors. While contracting has its place in helping States meet RCRA goals, it should not be used at the expense of building sound State programs. A RCRA program built on contractors cannot succeed when one considers that a contractor in FY84 costs an average of 2 to 2½ times the cost of State program personnel for equivalent skills.

In closing, the Association of State and Territorial Solid Waste Management Officials urges the Subcommittee to appropriate State grants funding levels as outlined by the National Governors' Association. A thoughtful and long range federal decision to adequately fund State solid waste programs will go a long way to enhancing the quality of life in this country and reducing the long-term cost and public liability of today's inadequate waste management programs.

State RCRA Program Resource Survey: Analysis of Responses

Methodology: The attached 8 page survey was mailed to the State RCRA Program Directors on March 7, 1984. The survey estimates staffing needs and availability in 4 major categories of RCRA activity: compliance; enforcement; permitting; and support. To calculate staffing needs the survey uses assumptions from EPA and Massachusetts about the staff resources specific activities require. The assumptions are intended to represent the least amount of resources needed by a state to meet the requirements of a sound hazardous waste management program.

Each survey received was reviewed by 2 members of the Massachusetts hazardous waste program staff and follow-up phone calls were made to clarify answers to specific questions. The last day of information gathering was March 30, 1984. Surveys received after this date are not included in this analysis.

Results in Brief:

- 22 or 44% of the 50 states responded.
- 2 state surveys were incomplete; 5 arrived after March 30, 1984.
- 15 state surveys or 30% of the 50 possible surveys are the basis for analysis; the states are Connecticut, Delaware, Illinois, Kansas, Massachusetts, Missouri, Nebraska, Nevada, New York, Rhode Island, South Carolina, South Dakota, Texas, Virginia, Wisconsin.

- For the 15 states:

  Total staff needed = 1580 — 70% Shortfall

  Staff available:
  - Total = 478
  - RCRA = 312: 65.5% of total
  - State = 166: 34.5% of total

The "Typical" State Hazardous Waste Management Program

Program Elements	Number of Respondents	Universe of Program Activities	
		Average Number	Range for Responding States
Compliance			
Financial Disclosure/ Closure Plans Cost Estimates	14	198.5	6-950
Major Facilities	15	54.8	1-195
Non-major Facilities	12	151.0	12-650
Large Quantity Generators	14	679.5	10-3700
Small Quantity Generators	9	1960.7	40-7000
Hazardous Waste Transporters	14	186.4	10-800
Manifest System	5	61,667.8	35,000-100,000
Enforcement			
Conduct Criminal Investigations	8	18.5	1-80
Prosecute Criminal Cases	4	2.8	1-5
Administrative Orders	12	31.8	2-228
Consent Decrees	10	8.7	1-45
Prosecute Civil Cases Annually	8	6.1	1-25
Permitting			
Land disposal facility	11	50.0	2-300
Treatment and Storage Facilities	15	113.0	1-345
Incinerators	12	9.5	1-45
New Facilities	9	5.1	1-15
Hazardous Waste Transporters	7	303.0	80-800

GRAND TOTALS: STATE RCRA PROGRAM RESOURCE NEEDS
ALL Hazardous Waste Management Activities

Major Category of Activity	Number of Respondents	Analysis of Staffing Shortfall			Analysis of Federal/State Funding of Available Staff				
		Total Need	Total Available	Percent Shortfall	Total Available	RCRA funded	Percent of Total	State funded	Percenc of Total
COMPLIANCE All states (average)	15	305(17)	154(10)	50%	154(10)	107(7)	69.5%	48(3)	31.2%
ENFORCEMENT All states (average)	13	115(9)	29(2)	35%	29(2)	19(1.4)	65.5%	10(0.7)	34.5%
PERMITTING All states (average)	15	947(63)	145(9)	85%	145(9)	98(6)	67.6%	45(3)	32.4%
SUPPORT All states (average)	15	213(14)	150(10)	30%	150(10)	88(6)	58.7%	63(4)	41.3%
TOTALS All states (average)	15	1,580 (105)	478(32)	70%	478(32)	312(21)	65.5%	166(11)	34.5%

The Affect of Staff Resource Shortfall on the Time Frame for Achieving Hazardous Waste Mangement Goals

	Staffing Level	Timeframe
Current State Average	32/state	16-23 years
Total Needs State Average	105/state	5-7 years (accounts for all Survey Assumptions plus sufficient time to attain total needs staffing level)

Comparison of Normalized Survey Assumptions With Alternate Assumptions Proposed by Survey Respondents

Part III: Permitting Program Elements	Normalized Survey Assumptions	Respondents Alternate Assumptions					
		Connecticut	Illinois	Missouri	New York	Rhode Island	Virginia
Land Disposal Facilities							
# of years to complete all permits	3	5	4				8
# of FTE staff persons per permit	2.33						
Treatment and Storage Facilities							
# of years to complete all permits	3	5	6				7
# of FTE staff persons per permit	0.71						
Incinerators							
# of years to complete all permits	3	5	4				2
# of FTE staff persons per permit	1.74						
New Facilities							
# of years to complete all permits	3	5					
# of FTE staff persons per permit	2.0						
Hazardous Waste Transporters							
# of years to complete all permits	1						
# of work days per permit	10	10		3-4	2-0	0.75	1.0

Affect On Resource Needs of Changes in Major Assumptions Suggested by Survey Respondents

	Part I. Compliance B. Major Facilities	Part I. Compliance D. Large Quantity Generators
• Original Assumption	4 inspections/year	5 years to complete all inspections
• Alternate Assumption	1 inspection/year	2 years to complete all inspections
• Change in Total Resource Need for Compliance	Resource need drops from 305 to 192 staff	Resource need increased from 305 to 346.7 staff
• Change in Shortfall of Compliance Resource Needs	Drop from 50% shortfall to a 21% shortfall	Increase from 50% shortfall to a 56% shortfall
• Change in shortfall for Total Program Resource Needs	Drop from 70% shortfall to a 67% shortfall	Increase from 70% shortfall to a 70.5% shortfall

Combined Effect on Total Resource Needs

The Shortfall in Resources Shifts from a 70% Shortfall to 68% - Only a 3% Change from Survey Results

Comments on Completeness of Survey by States Responding

The following activities were identified by states responding to the Survey as RCRA related activities which were not on the Survey but require resources:

State	Program Activity
Illinois	1. EDP inventory and compliance tracking systems (permits, inspections, financial responsibility, groundwater annual/biennial report information) need to be established, revised, adjusted. 2. Reporting systems for annual, biennial reports, etc. including form development, distribution and mailing, providing technical assistance on completing the form, identifying non-compliers and pursuing enforcement, purging and correcting submitted information prior to entry into EDP system, writing up compliance results for public distribution.
Missouri	1. Inspections and follow up enforcement for certified resource recovery facilities (interpreted to mean hazardous waste resource recovery facilities). 2. Inspections and follow-up enforcement for waste oil generators.
Nevada Rhode Island	1. Manual system for processing manifests.
South Dakota	1. Program to identify landfills which can accept small quantities of hazardous waste. 2. Project to collect, transport and dispose of small quantity hazardous waste from schools, local government, etc. South Dakota estimated the staff needed for #1&2 above at 2 work years.
Virginia	1. Follow-up enforcement of reviews of financial disclosure/closure plans cost estimates; Virginia estimated staffing need at 1.27 work years. 2. Program development (ie regulations promulgation, authorization application, etc.); Virginia estimated staff needed at 3.5 work years.
Wisconsin	1. Follow up on exceptions reports from the manifest system.

Comments from several states on Part II of the Survey, entitled RCRA Enforcement Activities, in general indicate that the RCRA enforcement programs vary from state to state in terms of the types of enforcement tools used, that a number of state agencies have responsibility for different types of enforcement, and that the total resource needs for the enforcement program are difficult to quantify. The states which commented are Connecticut, Illinois, Kansas, Missouri, Nebraska, Nevada, New York, Pennsylvania, Texas, Virginia, Wisconsin.

Analysis of Part II: RCRA Enforcement Activities

The number of states completing the various sections of Part II ranged from 5-13. Based on this and conversations with those who completed the Survey, Part II was the most difficult to fill out and enforcement is the least quantifiable of the four major RCRA activity categories. The following reasons for this were identified:

- * Insufficient information about resource requirements of the activities because they are so new;
- * Other state agencies such as the Attorney General or the Department of Justice are responsible for RCRA enforcement;
- * The states' styles of enforcement vary markedly and do not necessarily fit into the categories used in the survey; and
- * Interpretations of the definitions of the enforcement categories used in the survey vary from state to state.

These points indicate a need for additional refinement of the nation-wide parameters of an effectiveness state RCRA enforcement programs. (See also chart p6).

NATIONAL SOLID WASTE SURVEY

Preliminary Results

Earlier this year, ASTSWMO joined forces with staff from the U.S. Environmental Protection Agency (EPA) Land Disposal Branch of the Office of Solid Waste, and Waste Age Magazine to formulate a national solid waste survey which was distributed to State solid waste management officials in mid-February. Questions touched on such subjects as staff/funding resources for State and federal Subtitle D solid waste activities; State agency authority; numbers of landfills, surface impoundments, sludge facilities, and transfer stations; status of the Open Dump Inventory and State Solid Waste Plan; landfill siting requirements; small quantity hazardous waste generators; and, priority areas in solid waste management for 1984.

As of March 21st, ASTSWMO had received 43 State responses, or 77% of the total responses requested from the 50 States and 6 territories. Following are preliminary survey results, based upon answers supplied to key questions by those State respondents.

- -

Agency Authority

o Areas where the State respondents' agency has primary authority concerning solid waste management control, in descending order, include:

-- Regulating	43 States
-- Enforcement	41
-- Permitting MSW facilities	41
-- Technical assistance to public/private entities	39
-- Permitting on-site industrial non-hzd land disposal facilities	36
-- Permitting sludge disposal facilities	36
-- Permitting incinerators	36
-- Permitting transfer stations	35
-- Permitting resource recovery facilities	34
-- Evaluating new solid waste control processes	34
-- Permitting transportation/disposal of hazardous waste	33
-- Training	32
-- Planning	28
-- Permitting waste water treatment facilities	25
-- Permitting industrial on-site non-hazardous ponds/lagoons	24
-- Permitting non-hazardous surface impoundments	22
-- Research	19
-- Financing authority	7
-- Economic regulatory authority	3
-- Facility ownership authority	1

o Other entities cited as having primary authority over portions of the solid waste management program include Hazardous Waste, Water Quality and Air Pollution Control divisions/bureaus/boards; Public Utility Commissions; regional boards; or, local governmental units.

o Some States have no designated authority responsible for certain elements identified in the survey as being viable functions within the solid waste management area.

State/Local Government Relationships

o Regarding solid waste facility siting,

-- 19 States consult with local authority
-- 16 States can override local authority
-- 15 States oversee local authority
-- 8 States indicate that their local governments can veto State siting decisions

o Regarding solid waste facility permitting,

-- 31 States can override local authority
-- 11 States oversee local authority
-- 11 States consult with local authority
-- 3 States indicate that their local authorities can veto State permitting decisions.

(For these questions, some States chose more than one response.)

Intergovernmental Planning Levels

- The most common intergovernmental planning levels for solid waste below the State level, in descending order, are:

-- "Special districts"	17 States
-- When two or more counties get together	17
-- COGs which cross State boundaries	4
-- Municipal or individual county planning	4
-- Statewide solid waste authority	1

Staffing Resources

- 24 States report having a total of 43.63 full time equivalents (FTE) staff devoted to planning activities in their solid waste agency. Five States have 5.6 FTEs assigned from other State agencies for solid waste planning.
- 18 States have 21.69 FTEs available for training. One State has 0.25 FTEs assigned from another State agency under the training category.
- 4 States have 5.2 FTEs working on research efforts. One State has 0.1 FTE assigned from another State agency for this activity.
- 36 States have 97.05 FTEs available for technical assistance activities. Six States have 4.06 FTEs assigned from other State agencies to assist in these efforts.
- 39 States report having 154.57 FTEs devoted to permitting. Six States have 8.4 FTEs from other State agencies available for this activity.
- 36 States have 96.59 FTEs for enforcement efforts. Nine States draw upon 16.90 FTEs from other State agencies to supplement solid waste agency enforcement activities.
- 32 States have 44.00 FTEs available for regulation development. Three States indicate that 2.6 FTEs are assigned to assist in these activities.
- 38 States have 162.58 FTEs for field inspection work, while 16.80 FTEs from 4 States are available from other agencies for inspection activities.
- 40 States have 129.30 FTEs available for administrative and clerical support. Five States share 15.10 FTEs from other State agencies to lend assistance to solid waste efforts.

Professional Mix of Solid Waste Personnel

- There are 35.8 FTE geologists in 18 States.
- 14 States have 27.11 FTE hydrologists.
- 167.00 FTE engineers work in 35 States.
- There are 13.53 FTE chemists in 14 States.
- 90.50 FTE sanitarians work in 28 States.

Effects of Subtitle D Funding Cuts

- When RCRA Subtitle D monies were cut, 32 States lost 212.50 FTE positions. Nine States did not lose any FTE positions. Areas where losses were greatest include:

-- Field inspections	12 States
-- Technical assistance	11
-- Enforcement	8
-- Planning	7
-- Permitting	5
-- Administrative/clerical	1

- 26 States indicate that they still have an active solid waste program. 17 States do not consider their solid waste program to be "active."

Operating Solid Waste Landfill Statistics

- The 43 responding States indicate than an estimated total of 10,399 solid waste landfills are operational across the country. All but two States were able to break down their total estimated numbers into the following subcategories:

-- Publicly owned/operated	6,556
-- Publicly owned/privately operated	446
-- Privately owned/operated	1,359
-- Industrial on-site facilities	1,304
(not broken down)	734

- 41 States require State permits for publicly owned/operated, and publicly owned/privately operated solid waste landfills. 40 States require permits for privately owned/operated facilities, and 35 States require a permit for industrial on-site facility operations. Facilities located on Indian reservations in Montana do not need permits, and local governments in Colorado issue "Certificates of Designation."

- 39 States report than an estimated total of 5,621 solid waste landfills have been surveyed in their States using the same or similar criteria to the Open Dump Inventory. Of these facilities,

  - 1,714 monitor groundwater
  - 2,485 have been evaluated against Subtitle D groundwater criteria
  - 191 of those failed due to groundwater criteria not being met
  - 456 monitor for explosive gases
  - 2,905 have been evaluated against Subtitle D explosive gas criteria
  - 88 of those failed due to explosive gas criteria not being met
  - 4,876 have been evaluated against Subtitle D air emissions criteria
  - 848 of these failed due to air emissions criteria not being met
  - 756 sites failed to meet other Subtitle D criteria
  - Of the total failed sites for any criteria, 381 are under order to close, 408 are under order to upgrade, 608 have been closed, and 263 have been upgraded.

Surface Impoundment Statistics

- 32 States out of 41 respondents were able to supply data on numbers and types of surface impoundments in their States. An estimated 100,322 surface impoundments are known to exist around the country -- the number is probably much higher, since some States either did not have data available, or indicated that other State agencies (such as Water Boards) were responsible for compiling such information.

- Types of surface impoundments and estimated numbers of each type in the 32 responding States include:

-- Industrial	9,415
-- Municipal	13,723
-- Agricultural	51,088
-- Mining	19,569
-- Oil and gas	6,527

- Permitting requirements vary widely from State to State regarding surface impoundments. 20 of the 32 States with surface impoundment data indicate that they require State permits for industrial and municipal surface impoundments. 11 States require permits for agricultural surface impoundments, some depending on the size, type or operational purpose of the site. 17 States permit mining surface impoundments, and 14 States permit oil and gas facilities.

- 9 States report having 5,391 surface impoundments which were surveyed using the same or similar criteria to the Open Dump Inventory. Of these facilities,

  - -- 467 monitor groundwater
  - -- 634 have been evaluated against Subtitle D groundwater criteria
  - -- 7 failed the groundwater criteria test
  - -- 214 have been evaluated against Subtitle D explosive gas criteria, with no sites failing
  - -- 113 have been evaluated against Subtitle D air emissions criteria, with no sites failing
  - -- No sites failed for any other reasons.
  - -- Of the 7 sites which failed the groundwater criteria tests, one site is under order to close, one site has been closed, one site is under order to upgrade, and 2 sites have been upgraded.

Sludge Disposal Facilities Statistics

- 37 States indicate an estimated total of 5,099 sludge disposal facilities exist around the country. One State could not break down its numbers into subcategories, but 36 States responded that the following types of sludge facilities were operating in their jurisdictions:

-- Surface impoundments	346
-- Landfills	586
-- Land application	3,971
-- Other sludge sites	167
(not broken down)	29

- 16 States require permits for sludge surface impoundments; 18 require landfills to be permitted. 21 States require some or all of the land applications sites to be permitted, and 15 States permit other types of sludge disposal sites.

- 9 States indicate that they have an estimated 81 sludge facilities that have been surveyed using the same or similar criteria to the Open Dump Inventory. Of these sites,

    - 17 monitor groundwater
    - 26 have been evaluated against Subtitle D groundwater criteria, and 1 site failed
    - no sites monitor for explosive gases
    - 15 facilities have been evaluated against Subtitle D explosive gases and air emissions criteria, and no site has failed either test
    - 37 have failed other criteria tests, and are under orders to close.

- 30 States can account for approximately 6,929 stump, brush, demolition, or inert sites.

Transfer Station Statistics

- 39 States report an estimated total of 1,227 transfer stations around the country. Two States have an unknown number, and 2 States have no transfer stations.

- 907 of these transfer stations handle less than 50 TPD. 129 have from 51 to 100 TPD capacity. 83 are from 101 to 300 TPD capacity, and 70 can handle over 300 TPD of solid waste. States were unsure of the size range for 66 transfer stations.

- Of the total known transfer stations, the following breakdowns by type were available:

-- enclosed stations with compaction	391
-- enclosed stations without compaction	56
-- open stations with compaction	103
-- open stations without compaction	301

- "Green box" transfer stations number approximately 6,405, but totals are probably much higher because some States did not have detailed breakdowns of such stations in their local areas. Some States also included "green box" types in their total transfer station numbers, while others treated the "green box" station numbers separately from the totals listed above. California reported a total of 276 transfer stations -- half enclosed, half open (including green boxes), with 36 of the total having compactors.

New/Expanded Landfills

- There were approximately 424 new landfills approved and 145 expansions approved in 1983.

- Approximately 531 new landfills and 155 expansions were approved in 1982.

- About 560 new landfills and 147 expansions were approved in 1981.
- The number of expansion approvals has remained relatively constant over the past three years, but approvals for new landfills have dropped almost 25%.

Status of Open Dump Inventory

- 7 States have surveyed all solid waste facilities under the Open Dump Inventory; one State plans to survey its facilities and has the resources to complete the ODI.
- 32 States would complete the ODI if resources were available to do so.
- 6 States have no intention of completing the ODI.

Status of State Solid Waste Plan

- 18 States have completed their State Solid Waste Plan, and the plan has been approved by the State and EPA.
- 6 have completed it, obtained State approval, and partial EPA approval.
- 7 have completed it and had it approved by the State. Plans are now undergoing EPA review.
- 4 States have completed it and have it under State review.
- 7 States have partially completed it, but don't anticipate completion in the near future.
- 1 State does not plan to start one.

Solid Waste Landfill Siting

- Out of 43 State responses, the following solid waste landfill siting requirements are taken into consideration by the indicated number of States, in descending order:

-- Floodplains	37 States
-- Soils on the site	37
-- Minimum distance from floor or fill to aquifer	33
-- Unique historic, social & environmental considerations	30
-- Distance from streams, lakes, ponds, rivers, oceans	29
-- Watershed boundaries	21
-- Off-site traffic considerations	21
-- Prohibition over certain groundwater aquifers	20
-- Capacity needs of the area	19
-- Financial capacity of non-tax supported facility	13
-- Other considerations	11

- In 28 States, the State is responsible for approving solid waste landfill site selections. 17 States indicate that county governments have this responsibility; cities are responsible in 13 States, and regional authorities have jurisdiction over site selection in 4 States. (Some States responded to more than one choice.)

- 12 States can override local siting decisions, and in 10 States, local governments can veto a regional or State decision.

Small Quantity Generator Wastes

- 38 responding States indicate that they have a small quantity generator (SQG) exclusion level. 29 define a SQG the same as federal RCRA regulations (40 CFR Part 261.5 -- essentially less than 1000 kg/month of hazardous waste generated, or less than 1 kg/month of acutely hazardous waste generated). The other 9 States regulate at varying amounts under the 1000 kg/month level (usually less than 100 kg/month, or amounts depending on the degree of hazard the waste poses). Five States reported having no exclusion level for SQGs.

- Disposal methods allowed by states for SQGs include fairly standard technologies like land disposal at hazardous waste facilities or sanitary landfills, land application, incineration, treatment, deep well injection, or recycling/recovery. Four States require manifested wastes to be shipped out-of-state to permitted facilities elsewhere, and some States make disposal determinations on a case-by-case basis.

- Disposal methods primarily utilized by SQGs include the same methods as allowed by State regulators, but some SQG wastes find their way into sewers or illegal dumps, according to a few State responses.

- 6 States have specifically designated disposal facilities for SQG waste disposal, mostly permitted sanitary landfills. 30 States do not specify particular sites for SQG disposal, but allow disposal in landfills on a case-by-case basis.

- 16 States indicate that SQG disposal has had little or no effect on their Subtitle D solid waste program. 13 States report problems such as additional administrative workload; groundwater contamination/liability/depleted capacity at landfills; and, public concerns over potential environmental problems with SQG disposal in landfills. 11 States did not answer the question, and 3 were uncertain at this time of potential effects of SQGs on Subtitle D program efforts.

Solid Waste as a State Priority

- 42 States indicate an average ranking of 2.85 on a scale of 1 (high) to 5 (low) regarding how the States rank non-hazardous waste issues in the whole scheme of waste management. Breakdowns are as follows:

1 (high)	5 States
2	13
3	11
4	7
5 (low)	5

- The most common priorities for solid waste management in 1984, given current resources, include these generic areas:

  - Permitting new facilities
  - Developing alternative funding sources
  - Inspecting facilities more frequently
  - Increasing enforcement actions
  - Upgrading/closing open dumps
  - Training/certification of landfill operators
  - Sludge management
  - Resource recovery, waste-to-energy projects
  - Groundwater monitoring
  - Revising solid waste laws, regulations

- If federal funds were made available for Subtitle D efforts, 24 States indicate that their solid waste management priorities would change. Most would rearrange the order of their 5 priorities or add new initiative to delve into areas now restricted by lack of funds.

- 15 States said that their priorities would not change, and some of these States indicate that they would have to see what "strings" were attached to any federal funding which may become available before accepting federal Subtitle D grants. 4 States did not answer the question.

Miscellaneous

- 13 States are performing research or special projects to evaluate Subtitle D groundwater contamination and/or air emissions. 29 States are not involved in this activity now.

- Special wastes, i.e., those waste materials which are non-hazardous but not of the same consistency as municipal solid waste from households and commercial facilities, are handled in a variety of ways by States, as follows:

  - 36 States permit or license special wastes on a case-by-case basis depending on quantity and consistency.
  - 9 States allow disposal without State oversight.
  - 6 permit or license by class of material.
  - 2 States do not allow special wastes to be disposal at MSW facilities.

- 37 States report an estimated total of 13,564 citizen complaints were received concerning solid waste in 1983.

- 35 States took approximately 2,986 enforcement actions against municipalities, counties, private companies and individuals in 1983. Of those actions,

  - 650 were specifically taken against municipalities
  - 247 were against counties
  - 1,156 were against private companies or individuals

(8 States either took no actions, had no data available, or were not able to break down totals into subcategories.)

o 37 States have analyzed the need to revise State regulations regarding the disposal of non-hazardous wastes, particularly pertaining to groundwater and air emissions. Five States have not made such a determination.

States That Have NOT Responded to Solid Waste Survey

(as of March 21, 1984)

Alaska
Louisiana
Maryland
Massachusetts
Michigan
Missouri
Tennessee

American Samoa
Guam
Puerto Rico
Virgin Islands
Northern Marianas
District of Columbia

NATIONAL SOLID WASTE SURVEY RESULTS -- Addendum

Question #10

Thirty-nine states reported a total budget of $26.4 million in FY81; $21.6 million in FY82; $19.5 million in FY83; and $21.6 million in FY84.

The decline in total budgets in FY82 and FY83 appears to be a direct result of cuts in federal funding. For 13 states, federal funds accounted for 50% or more of the total budget in FY81 and FY82. In FY83, only Illinois indicated that more than 50% of its budget was from federal funds. By FY83, 22 states said no federal funds were included in the budget, and 12 could not break out the source of funding. Five states reported some of the funds came from licenses, fees, or user charges.

For most states, 75% or more of the budgets were for personnel. Seven states indicated capital assistance had been provided to local governments. Eight states provided direct technical assistance. Nine states provided funds to local governments to hire a consultant.

Question #15

Twenty-five states were able to provide information regarding the size of land disposal facilities, as follows:

Publicly-owned and operated sites

0 - 100 TPD	4,432
101 - 250 TPD	290
251 - 500 TPD	136
501 - 1,000 TPD	79
>1,000 TPD	19
TOTAL	4,956

Publicly-owned and privately-operated sites

0 - 100 TPD	193
101 - 250 TPD	56
251 - 500 TPD	37
501 - 1,000 TPD	7
>1,000 TPD	3
TOTAL	296

Privately-owned and operated sites

0 - 100 TPD	753
101 - 250 TPD	111
251 - 500 TPD	83
501 - 1,000 TPD	60
> 1,000 TPD	21
TOTAL	928

Sixteen states indicated they had information regarding the size of industrial, onsite landfills as follows:

0 - 100 TPD	742
101 - 250 TPD	163
251 - 500 TPD	54
501 - 1,000 TPD	6
> 1,000 TPD	21
TOTAL	986

Only 10 states were able to provide data (some incomplete) about waste service impoundments or sludge disposal facilities.

Question 30

State requirements for the following technologies have been proposed or approved in the following number of states:

	PROPOSED	APPROVED
Ground water protection standard	9	10
Leachate collection	10	5
Caps	11	7
Ground water monitoring	14	10
Correct action, ground water	8	7
Air protection standard	7	6
Air or gas monitoring	10	7
Gas controls	7	7
Corrective actions (air, gas)	7	6

States indicated the following systems were in place at the number of solid waste landfills indicated:

Leachate collection	411
Caps	742
Ground water monitoring	1,767
Corrective actions (ground water)	104
Air or gas monitoring	920
Gas controls	273
Corrective actions (air, gas)	89

Fewer than 10 states reported the same controls for waste surface impoundments and sludge facilities.

STATEMENT OF THE ASSOCIATION OF STATE AND INTERSTATE WATER POLLUTION CONTROL ADMINISTRATORS

The 1972 Clean Water Act established a State/Federal Partnership to implement the National Clean Water Program. State Water Administrators embraced this concept and now manage over 70% of the program. This Subcommittee and the Congress, in turn, placed substantial trust in the States, investing billions of dollars in municipal wastewater treatment construction grants and millions of dollars in State management assistance grants.

The Association has testified before this Subcommittee many times on the continuing need for the partnership. Since the Subcommittee is familar with the issues and has followed the transfer of program management to the States, ASIWPCA sees no need to reiterate well understood positions. We would, however, like to emphasize several points:

- The delegation established in the law is working and -- although it is often easy for those on the shores Potomac to forget -- States do the lion's share of the:

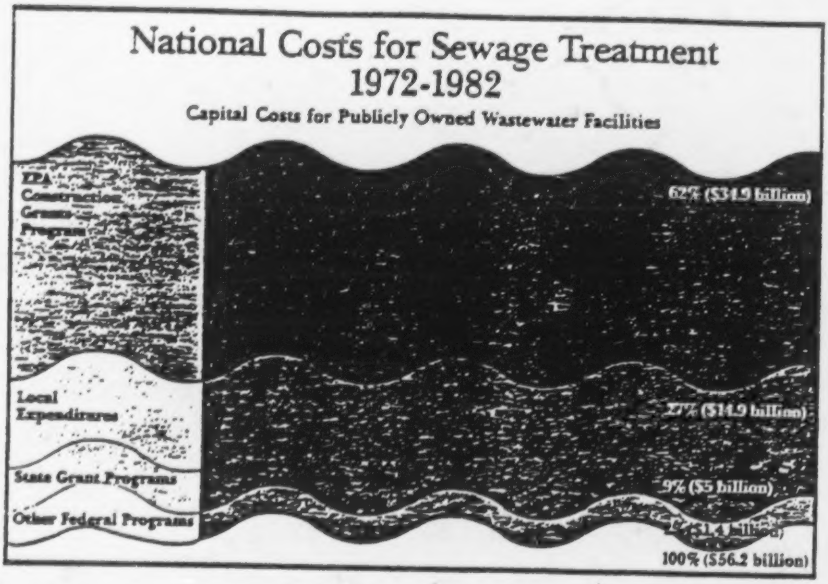
  .. water quality monitoring.
  .. water quality standards setting,
  .. permit issuance, and
  .. enforcement.

- To promote effective program management, States prefer to spend their limited resources on environmental cleanup, not paper shuffling. The US EPA, however, has a tendency to focus on bean counting which in many instances, has little to no relationship to the actual clean up of our nation's environment.

AMERICA'S CLEAN WATER

On several occasions, You, Mr. Chairman and others have asked questions of the States and US EPA which we simply could not answer. It was clear, from these experiences, that a better understanding, was needed of our program accomplishments. ASIWPCA took your questions as a direct challenge and set out to document the status of the National Clean Water Program.

The 18 month effort culminated in America's Clean Water, The States' Evaluation of Progress which you and the members of Congress, as well as the Nation's Govenors have all received. Our report, based on 56 State and Interstate submissions, indicates the public has benefited substantially from the National investment since 1972 in the Clean Water Program (findings can be reviewed in more detail in the attached report).



National Costs for Sewage Treatment 1972-1982

Capital Costs for Publicly Owned Wastewater Facilities

As indicated above, the National Clean Water Program is a joint venture of Federal, State, and local entities. While this subcommittee is intimately familiar with the details of Federal funding, we would like to point out that over $5 Billion of State monies not required by Federal statute have been invested in municipal waste treatment. This is in addition to that required for industrial pollution abatement. As a result, America's Clean Water reports that:

OUR KNOWLEDGE HAS INCREASED

- Whereas 54% of streams were of unknown quality in 1972, that number was reduced to 9% by 1982.
- Of the Nation's 1.8 million stream miles, 58% are generally free from known water pollution problems. The remaining 42%, discussed in America's Clean Water, support population and industrial activity.

POLLUTION HAS DECREASED

Pollution has decreased despite an 11% increase in population and an even greater increase in pollutant loadings. In those streams where the data was available to make a comparison between 1972 and 1982, water quality has:

- improved in 47,000 river miles,
- maintained its generally good quality in 296,000 miles, and
- degraded in 11,000 miles.

MORE DESIGNATED USES ARE SUPPORTED

- 64% of the nation's streams now fully support designated uses,
- 22% partially support their uses, and
- 5% do not currently support their use.

SUBSTANTIAL PROGRESS HAS BEEN MADE IN MUNICIPAL WASTEWATER TREATMENT

While the US EPA Needs Survey indicates approximately $118 Billion in construction needs outstanding, substantial progress has been made in terms of population served and pollution abatement:

- Pollution Reduction--Treatment systems installed since 1972 have reduced the amount of pollution released to streams by 46%. Had these improvements not been made, we estimate the 1982 discharges would have been 191% greater than the levels actually discharged.

- Population Served--142 million people in 1982 were receiving acceptable levels of sewage treatment -- an increase of 58 million over 1972 levels.

- The Population Needing Treatment-- but not receiving either collection or treatment -- dropped from 21 million in 1972 to 14 million in 1982.

- Population not requiring Treatment -- 44 Million people do not need central treatment systems because they are adequately served by on-site disposal.

- Cost To The Individual-- The improvement in treatment levels has been achieved at a modest cost of $260 per capita nationally during the decade, that is $26 per person per year. A modest investment for the benefits received.

COMPLIANCE WITH THE LAW HAS IMPROVED

State recognize compliance is important and they have a direct interest since 36 States have NPDES delegation and are the primary enforcers. While we recognize the need to do more, we are pleased with the improvements achieved over the last 10 years:

PERCENTAGE	SIGNIFICANT COMPLIANCE	
	1972	1982
Municipal	33%	79%
Industrial	36%	78%

It is our understanding that the members of this Congress have an interest in directing additional funding toward compliance and enforcement activities. With 70% of this work being done by states, we would ask that you direct a significant portion of those additional dollars to State efforts as funded under Section 106 of the Clean Water Act.

FUTURE ISSUES

While we are pleased with the results of the project, we cannot settle for the status quo. Environmental protection is an ongoing, perpetual effort. State programs are becoming increasingly sophisticated in response to complex problems which endanger the environment, public health, and welfare. America's Clean Water indicates the following are major future issues:

- **Municipal wastewater treatment** -- funding is needed for construction, including innovative methods at the Federal, State, and local level. Long term municipal self sufficiency for operations and replacement should be achieved wherever possible.
- **Elimination of toxicity** -- States will use chemical and biological methods to isolate and eliminate toxicity. This requires substantial investment in technical know how and site analysis by government and the private sector.
- **Groundwater protection** -- Groundwater contamination must be minimized and prevented in the future.
- **Nonpoint source pollution** -- Further advancements are needed in nonpoint source control for priority water problems, particularly related to agriculture, mining, and urban runoff.

SUMMARY

The State Water Administrators need the support and committment of Congress and the US EPA to meet these challenges.

§106 State Management Assistant Grants -- The Association supports the National Governors' Association's request for a 10% increase in State management assistance grants:

- Delegation transfers the work load, it does not terminate the National Clean Water Program. Continued funding is required if States are to implement the requirements of the National program.
- As America's Clean Water indicates, substantial issues remain to addressed, and §106, considered to be the cornerstone of the State programs, needs your support.

Construction Grants -- The Association worked diligently during the enactment of the 1981 Amendments to maintain the integrity of the program and secure a transition period for program stability. While construction grant needs far exceed the authorization level, we would prefer to address this issue in the context of Title II reauthorization. In the interim, we continue our committment to a $2.4 Billion authorization.

Nonpoint Sources -- Primary responsibility for nonpoint source control resides with the State. It is difficult, however, to conclude from the data, without further analysis, specifically:

- what are the priority nonpoint source problems,
- what is the status and future of State programs, and
- what are the effective techniques.

ASIWPCA will be seeking answers to these and other questions in our newest project using an approach similar to that taken in America's Clean Water. We look forward to providing the information to the Subcommittee as it becomes available during our 18 month investigation.

Groundwater -- While US EPA's draft groundwater strategy embodies concepts the ASIWPCA membership supports, we are tremendously concerned about their proposed method of financing. It is incredible for the US EPA to consider promulgating a comprehensive, ambitious strategy and yet provide no funding.

You cannot spend state grants twice. Either States implement the program Congress intended under §106 and §205(j) or they implement the US EPA groundwater strategy, but we cannot have it both ways. A shell game with §106 and §205(j) is detrimental to both surface and groundwater objectives. On the one hand, for example, US EPA is pressing States hard to increase enforcement and on the other hand they intend to impound those resources for a new program. The situation becomes even more bizarre, because implementation is not eligible for funding under the strategy.

States recognize that groundwater protection is an important future issue, but we want to emphasize the importance of moving forward in a positive, constructive manner. Robbing Peter to pay Paul and then threatening Paul with sanctions is simply not sound environmental management.

The Association appreciates the opportunity to come before this Subcommittee and is prepared to answer any questions you may have.

April, 1984

SUMMARY EXPENDITURE OF STATE MANAGEMENT GRANTS FOR THE WATER PROGRAM

Background

State management of the National Clean Water Program is funded under sections 106, 205(j) and 205(g) of the Clean Water Act. While §205(g) is directed principally to management of the Construction Grants program, the remaining authorities have broad eligibilities:

- Virtually all planning and implementation activities are eligible under §106, and
- Planning activities are eligible under §205(j) but targetted to special categories set out in the 1981 Amendments (Water Quality Standards revisions and local planning).

The Administration identifies from time to time new program directions in such areas as nonpoint source control and groundwater protection. Sections 106, 205(g), and 205(j) are generally cited as available funding sources for these activities. State are very concerned about this trend because these funds are fully allocated to other statutory requirements of the law.

ASIWPCA Survey

ASIWPCA surveyed States to document the funding pattern. 25 States responded and the results are outlined below. We draw several conclusions from the data:

- §106 and 205(j) funds are fully allocated,
- State have used the flexibility provided by Congress to support very important areas of the water quality program which are generally mandated by law, and
- A conscious tradeoff must be made in the National Clean Water Program if funding is to be diverted from current activities to support new US EPA directions.

Section 106

As the baseline grant for National Clean Water Program, §106 supports many activities which generally fall into the following categories:

Permit issuance	43%
Enforcement	32%
Monitoring	19%
Construction Grants Management	4%
Nonpoint Sources	2%

Directly and indirectly, these funds support nonpoint source and groundwater programs in 11 States and 7 States respectively. Although in a few States, groundwater and nonpoint sources constitute a major program emphasis, generally such funding is minimal. As distribution of §106 funds indicates, setasides for special activities would seriously erode critical areas of the National Program.

Section 205(j)

When Congress created §205(j), a priority setting process was established for involving State and local governments. §205(j) is not mad money to be shifted from one "priority de jour" to another. Such a practice would bear little relationship to priority needs at the individual State level.

60% of the States use an established process to set priorities, and the remainder created a new process. Mechanisms include public hearings, negotiations, and State/US EPA Agreements. The portion allocated to State (vs. local activities) varies:

Percentage to State Activities	Number of States
0 - 50%	4
50 - 75%	5
75 - 100	16

Activities supported related either to comprehensive problem solving on a geographic basis or to key program activities:

Priority	Number of States *
A. Comprehensive Geographic Studies:	
Rivers	7
Estuaries	6
Marine waters	2
Lakes	2
B. Program Activities	
*** Nonpoint Sources**	22
Shellfish Protection	(3)
Agricultural	(6)
Mining	(3)
Onsite Disposal	(2)
Silvaculture	(3)
Urban	(2)
Construction	(2)
Combined Sewers	(2)
Oil and Gas	(1)

• **Groundwater**	14	
Program Development		(13)
Implementation		(9)
• **Industrial & Municipal Point Sources**	13	
Advanced Treatment Reviews		(4)
Other Waste Load Allocation		(8)
Municipal financing strategies		(6)
• **Water Quality Standards**	18	
General Review/Revision		(9)
Criteria Development/ Use Attainability		(7)
• **Water Quality Monitoring**	20	
General		(12)
Toxics/Biological Assessments		(5)
Nonpoint sources		(3)

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* Note: ( ) indicates States specifically citing this area of activity. Since States can have more than one such area, the numbers in parenthese are not cumulative.

STATEMENT OF RICHARD B. GLAZER, CHAIRMAN, ENVIRONMENTAL AND ENERGY PROGRAMS, ULSTER COUNTY COMMUNITY COLLEGE, N.Y.

Senator MATTINGLY. Mr. Glazer, chairman of the environmental and energy programs, Ulster County Community College in New York.

Mr. GLAZER. I wish to thank Senator Garn and members of the committee for having me here today.

I am Richard Glazer, professor and chairman of the Division of Business and Human Resources at Ulster County Community College in New York State. Over the past years I have appeared before you to discuss the need for the continuation of funding for academic training in the Environmental Protection Agency's annual budget.

During this period, your committee has been concerned about these needs and have committed themselves to the continuation of the EPA's role in this training.

As the problems of environmental pollution are persistent, so, too, are the needs for trained people in all the areas of environmental pollution control. Each year brings new problems and new approaches to solutions. This, in consort with the computer revolution, has brought the need for academic training into areas which less than a decade ago did not exist. These include the use of microcomputers in diagnostic evaluation and problem solving, interactive microcomputer training programs, and interactive nonpunitive training, and testing for a variety of skills and tasks.

In a very short period of time, in fact, microcomputers have become an integral part of waste treatment plant operations. In the past, I have based my appeal on the problems with our waters, waste water, solid waste, air pollution, and hazardous waste which brought about an unprecedented degradation of our environment.

For this testimony, I wish to take a more positive approach and discuss briefly just a small number of the many programs the EPA academic training funds have supported. These funds have impacted every State through a host of academic and State training programs.

Some of these are: Boise State University, an upgrade in microcomputer diagnostic software programs for water and waste water treatment. This program developed diagnostic methods for microcomputers for use by plant operators and technicians.

Atlanta University Center for Black Colleges, to train minorities for environmental careers in water and waste water.

The University of New Mexico, training trainers; to train public health officers in solid waste management and control and train other solid waste personnel in these techniques.

One America Educational Services, Inc., which develops educational packages for States to use in working with and educating small business people on the requirements of Government grants and contracts and utilization of minorities in environmental areas.

The Northeast States for Coordinated Air/Youth Management, develop training packages for oil spill control and cleanup.

The Colorado School of Mines, Energy and Mineral Field Institute.

These groups developed and produced a course to educate State and National legislative personnel on the environmental problems created by mining. The course provided these legislative personnel with an understanding of mining environmental interrelationships so they could better work with proposed mining legislation.

The State of Washington, State Environmental Office; to train State environmental personnel to better prepare and prosecute environmental cases.

The Environmental Protection Agency; studying the technical assistance supplied to the States to determine the type of assistance given, the utility of it, and what do the States desire.

Ulster County Community College, the college that I represent, the water quality monitoring training program. This program trains technicians to work in the fields of water and waste water monitoring and treatment. This program was recently selected as one of the top five college vocational education programs in the country by the National Center for Research in Vocational Education. That would never have happened if it wasn't for EPA training funds.

The local and remote microcomputer testing-training program, also at Ulster, this system uses both local and remote microcomputer communications network to support test generation and achievement testing. It has a user-based/data-based management system and an interactive training evaluation system.

What I have presented here is a small portion of the programs which have been supported with EPA academic training funds. These programs, however, have greatly influenced the training of environmental control personnel in all control areas and professions.

When looking at the geographic distribution of these programs and the broad scope of institutions, agencies, businesses, and people that they have impacted, it becomes clear that the EPA is the only agency in the position to monitor changes in the law, regulations, technology, and training by regions and States and to focus their resources where they are needed most, in the shortest period of time, and with the greatest cost-effectiveness.

For these reasons, I am asking that the U.S. Senate place into the EPA fiscal years 1984–85 budget $5 million to sustain the Environmental Protection Agency's national training effort.

I further request that the Senate insert into the Clean Water Act a training function requirement, similar to that placed in the Resource Conservation and Recovery Act (RCRA). The funding would assure the continuance of operator training, academic training, and State training assistance.

I wish to thank the Senate subcommittee for the past and present graciousness and for your very effective assistance and for giving of time to listen to my testimony today.

Senator MATTINGLY. We thank you for your testimony and, as noted earlier, this subcommittee consistently supported operator training programs. I appreciate your description of the programs funded by our add-ons over the last several years. We will certainly consider your recommendation for continued funding.

Dr. Weinstein and Dr. Marland.

STATEMENTS OF:
LEONARD H. WEINSTEIN, CORNELL UNIVERSITY
RICHARD E. MARLAND, MEMBER, COMMITTEE ON ENVIRONMENT, ON BEHALF OF NATIONAL ASSOCIATION OF STATE UNIVERSITIES AND LAND-GRANT COLLEGES

Mr. WEINSTEIN. Thank you for the opportunity of appearing here today. I am Leonard Weinstein. I am the program director for environmental biology at Boyce Thompson Institute at Cornell University and adjunct professor of the Department of Natural Resources. I represent the Environment Committee of the National Association of State Universities and Land-Grant Colleges.

The purpose of my testimony, with my colleague Dr. Marland, is long-term research in the EPA budget. A statement has been submitted to you, which gives more detail, and I am sure you will see more of that.

First of all, I would like to say that we endorse and applaud the statement made by the group from industry and the environmental groups, which is a landmark association, certainly.

If there is a theme to what I would like to say, it is that the universities deserve and need support in the area of long-term research and EPA, in order to heed its mandate in the environment, just have more long-term resources.

Generally, in the past, EPA has insisted that their mandate is enforcement and abatement. This has led to what, I guess, could be called a quick fix, short-term research, short-term solutions to serious problems. I think that this kind of approach has led to the problems of acidic deposition, for example, and I think to serious toxic waste problems, such as we find in the Niagra Falls area.

If research had been conducted over the long term, instead of by research one year at a time, many of these problems would have been seen, and I think by now, if not solved, at least we would know how to handle them. The problem, therefore, is insufficient time to conduct research in any particular area.

The National Association of State Universities has identified three areas for discussion this morning, at least by me, in which EPA can provide long-term research to universities and institutes for studies of these problems.

The first of these is the EPA competitive grants program. EPA has had this competitive grants program for some period of time. It is woefully underfunded. The 1984 budget, for example, is somewhere in the vicinity of about $10 million. That is $10 million to support all aspects of environmental research. It is certainly, if one assumes $100,000 is an average grant for a scientists, technician, and supporter, you can see that very few proposals can be supported considering that you have proposals from the previous year, which also are up for second-year support.

The second problem is there seems to be a regulation within the Federal Government that the competitive grants program cannot support more than 2 years of research, which is by no means long term. In 1982, the competitive grants program had about $22 million. As I say, in 1984, it is closer to $10 million. So the cut has been a significant one. If one were to look at this program in terms of 1985 dollars, the $22 million would be somewhere around $28 million.

I think we are asking for a restoration of funding in the competitive grants program, at least to that area to allow scientists to apply competitively and to innovate research in these areas that are of such great concern to our country.

A second area is the centers of excellence. There are eight of these centers distributed pretty much throughout the country that are awarded competevely. The point of these was to maintain over a period of years continuous support so that the centers could mount programs looking at the future problems, also to bring in graduate students who could be trained in these areas of research and management.

What has happened over the years is that the funding is always uncertain, as most things are in EPA, in terms of research. Funding is uncertain from one year to the next, so that, in essence, it is difficult to mount the core program and to mount a continuous research project in any particular area. This uncertainty wastes a lot of time and time wastes a lot of money. I think these things certainly can be approached.

The third area is the one of cooperative agreements with universities and an example of this might be a program such as the national crop loss assessment network which has been in existence about 4 years and is composed of universities throughout the United States representing all the major agricultural sections. The purpose of the organization was to look at losses from air pollution to major crops in this country.

After 4 years of research, we have preliminary loss estimates which make it appear, according to the economists, that the losses are somewhere between $1 billion and $5 billion a year in four major crops from one pollutant only—ozone. This is not looking at acidic precipitation; it is not looking at sulfur dioxide; it is not looking at the combined effect of air pollutants. So we have a long way to go in this area. This program, too, is always under threat of being abolished.

I think I can end my statement by indicating that if EPA does not support long-term research, no one else is going to. The National Institutes of Health and the National Science Foundation and USDA are not interested in environmental research, although NSF, at one time, did support research in a program called research applied to the national needs, which has been an applied research program—applied research, that is.

If that program were still in existence, it would be fine, but it is not and, therefore, we must look to EPA to support research applied to national needs. Thank you.

Senator MATTINGLY. Let me ask you a question. You said only a small fraction of EPA's acid rain research funds go to universities and the bulk goes to national labs and other governmental agencies. Are you suggesting Federal labs really can't adequately conduct that research?

Mr. WEINSTEIN. I don't think the Federal laboratories are organized to conduct this kind of intensive research, at least the Federal laboratories with which I am familiar.

It is possible that if the Federal laboratories had some of this money, they would distribute it to outside people to manage or conduct the research, as they have in the past. I do know there is a lot of—and since this statement was written—a lot of funding has been earmarked for acidic precipitation or acidic deposition research. How it is going to be spent, no one knows yet, obviously.

Senator MATTINGLY. Thank you very much.

Dr. Marland.

STATEMENT OF RICHARD E. MARLAND

Mr. MARLAND. Thank you for the opportunity to present some additional views.

Senator MATTINGLY. If you could abbreviate your statement, after which we will insert your formal statement into the hearing record.

STATEMENT SUMMARIZED

Mr. MARLAND. I will do essentially that. I will summarize two or three highlights and add one or two points which are not included in the written testimony.

We of the National Association of Land-Grant Colleges and State Universities feel that much of the long-range research which was described so well by Dr. Fernandez and Dr. Peterson is not, in fact, being done by EPA. It should be done for the Nation's benefit.

EPA, quite logically, concentrates its resources on the short-term. quick turnaround research which it does so well in its own laboratories. We have absolutely no fault to find with that. We commend the fact they have done good work.

Where EPA is not expending resources and not obtaining results, not providing America with what it needs, is in the highly applied but long-range kinds of studies of which our universities are uniquely qualified to do an outstanding job.

Here we have one organization within EPA that has opened up an avenue and a very successful opening to a relationship with State universities where a partnership can be fruitful. That is through its peer-reviewed research grants and centers program. That program is now receiving 3 percent of the R&D budget of the Agency. That 3 percent represents a vastly too small a figure, as Dr. Weinstein points out. We are urging that in the 1985 appropriation before this committee at this time that this committee recommend to the Agency that some $50 million be allocated for the functions of that office.

Let me tell you briefly what this will provide. This would provide a vast expansion in the innovative kind of thoughts, studies, and tapping of the brain power of universities through the grants program.

As a second measure, it would provide for an improvement in the operation of the eight existing centers. These centers are concentrated on particular problems. There is a strong need to create additional centers of excellence.

Three topics come to mind for which the centers would be ideally suited as a mechanism for developing information. These topics are, one, risk assessment for the evaluation of the health risk associated with the pollutants in our ambient environment.

Another would be desert ecology whereby we could open up the vast resources of our arid portions of the world so as to provide for a richer utilization of the arid resource.

A third one would be microbial ecology. There already is a small amount of effort underway in the greater use of specialized microbes in the solution of some of our environmental pollution problems. These are three areas where we think centers of excellence are justified in the close, near term.

So these highlights we bring to you so as to give this committee an opportunity, perhaps, to take a stride in improving the basic kinds of information on which EPA makes its enforcement decisions. You have good opportunity. The universities are in a position to do a good job providing EPA with good science. We hope you will make it possible.

Senator MATTINGLY. Thank you very much, Dr. Marland. Thank you all very much.

[The statement follows:]

STATEMENT OF DR. RICHARD E. MARLAND, COMMITTEE ON ENVIRONMENT, NATIONAL ASSOCIATION OF STATE UNIVERSITIES AND LAND-GRANT COLLEGES

Thank you for this opportunity to speak to you in support of the 1985 research budget of the Environmental Protection Agency.

It is my hope, in this statement to provide you with a basis for two modifications to the request under consideration: (1) Provide a level of resources more in keeping with the scope and severity of the problems; and (2) Provide for a stronger research partnership between EPA and the Nation's academic scientists.

This statement will elaborate somewhat on the Information Packet with which you have been provided. The Packet contains: (1) a Fact Sheet; (2) Graphs and charts depicting EPA's research budget; (3) appendices from which the fact sheet is derived; and (4) two references to recent publicized reports on acid rain: one is the November 1982 report by Pitts and Pitts to the Office of Technology Assessment of the U.S. Congress; the other is an evaluation of the National Acid Precipitation Program, dated August 1983 and sponsored by the Interagency Task Force on Acid Precipitation.

We are all aware of the President's State of the Union message wherein he stated, "I have requested for EPA one of the largest percentage budget increases of any Agency." The budget before you does, in fact, request a $33 million increase in research funds over the 1984 appropriation. This is a 13% increase and in light of the Nation's fiscal problems would appear to be generous. The fact remains, however, that the $278 million requested for FY 1985 is nearly 70 million less than the research appropriation for Fy 1981. Therefore, the 1985 effort will provide 20% less than the 1981 accomplishments -- even before discounting for inflation.

In light of the pressing needs for improved methods for protecting our environment, one of which is the acid rain problem, this level of support is extremely modest -- indeed it is evident that the scope and complexity of environmental problems requiring research are either not recognized or are of a low priority. I hope that this committee recognizes, in the information available to you, the basis for providing a level of support substantially higher than is being requested, yet being more commensurate with the importance of the problems needing solutions.

There is a popularly-held notion that the Administration is mounting a substantal research effort to solve the acid rain problem. Let us look at the facts and judge for ourselves whether or not it is a substantial effort and whether it is directed toward problem solving. Of the $33 million requested increase, $19 would be assigned to that program. This would appear to be commendable, showing that the Agency is increasing the priority it assigns to acid rain.

However, a closer look discloses the fact that EPA has assigned substantially all its increase to further monitoring of the problem. None of the proposed acid rain research has been assigned to the competitive peer reviewed research grants program, the Agency's best sponsor of long range research. That program within the EPA's Office of Research and Development has gained the respect of the research community in the four short years it has been in existence. Despite its relatively tiny size (it is scheduled to receive only $10.3 million in 1985) it has attracted many of the Nation's outstanding environmental scientists and engineers to perform research or to serve on its external peer review panels. Despite its newness, more than 232 articles have been published in professional refereed journals as a result of the first three years of research. This record is similar to the results obtained by NSF and NIH from their research awards. The quality of research performed by EPA's grantees is also reviewed by external peer review panels. This combination of careful selection and review of progress has provided EPA with a program which stimulates the best investigators to perform high quality research and provide the best data. This is the sort of research which EPA should emphasize. Yet, there has been, and continues to be a strange reluctance on the part of EPA to use the competitive research grants program to its full potential.

We feel strongly that more of EPA's research effort should be accomplished through its competitive, peer-reviewed Research Grants and Centers Program. It will bring the nation's best scientific talents to bear on the urgent problems, whereas the other procedures for conducting research in EPA have not accomplished this.

Because of the past indifference which EPA has shown toward such research, the present request before you is only a small fraction of the level of effort which is warranted. The \$10.3 million is barely 3% of the extramural research budget request. Even if the Program were restored only to the '81 level, the budget for grants and centers would be about \$35 million in 1985. A more rational resource base would be in the order of \$50 million in FY85 for this program. Such a sum would be most prudent investment in good science leading to resolution of environmental problems.

Again, the acid rain problem is a good case of this point. The Agency plan excludes long range research supported by grants, choosing instead to allocate substantially all of its resources to further monitoring the problem. This action is in sharp divergence from recommendations of the two references to this statement. The Interagency Task Force Report (Reference B) calls for not only expanded research, but more long range research into basic causes (and potential prevention) of acid rain.

Reference A (The Office of Technology Assessment Report) lists several broad and many specific research topics which need study. There are too many to cite here, but at least two of the broad topics are well suited to investigations using investigator-initiated research grants. These are: Item 2, Chapter IX, "What is the role of sunlight in promoting the formation of sulphuric acid from SO_2 dissolved in water droplets or on wet surfaces. Similar consideration apply to NO_x." Also, Item 3, Chapter IX, "How important is the uptake of hydrogen peroxide and associated free radicals from the gas phase into aquecus droplets on wet aerosol surfaces compared to in situ formation in solution?"

You, the Members of the Committee, are in a position to make a difference -- perhaps a substantial difference -- in the success we can expect in resolving the matter of acid rain and other pressing environmental issues. You can assure that EPA's research effort is supported by a substantially larger budget than is being requested. You should be thinking of an increase in the order of \$100 million rather than 33. And you can assure that high quality research and new, innovative ideas are tested by calling on EPA to work in closer partnership with academic scientists through greater use of investigator-initiated, peer reviewed research grants. Instead of turning off the support of academic research you can turn it on.

I hope this Committee and this Congress takes these two steps. Thank you.

NATIONAL ASSOCIATION OF STATE UNIVERSITIES AND
LAND-GRANT COLLEGES

COMMITTEE ON ENVIRONMENT

Information Packet on Environmental Research in the 1985 Federal Budget

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C. Comparison of EPA Research Funds with Federal R&D Obligations (Chart from Special Analysis K)

Appendices

A. ORD Budget Analysis, 1971-1985

B. "Sleight of Hand with EPA's R&D Budget" (Science, March 9, 1984, p. 1745 et seq.)

C. "Environmental Programs, FY 1985" (Government R&D Report, Vol. XVIII, No. 3, March 1, 1984)

D. Members of NASULGC Committee on Environment

References

A. An Assessment of the Atmospheric Chemistry of Oxides of Sulfur and Nitrogen: Acid Deposition and Ozone, by Pitts and Pitts. A Final Report to the Office of Technology Assessment of the Congress of the United States.

B. Report on the Sources, Monitoring, and Atmospheric Research. Review Meeting of the National Acid Precipitation Assessment Program. Sponsored by the Interagency Task Force on Acid Precipitation.

FACT SHEET

Environmental Research in the 1985 Budget

* The White House recently announced that the 1985 Budget included an increase of 14% for research among all agencies - Keyworth release dated Feb. 1, 1984.
* The President's State of the Union Message included ". . . I have requested for EPA one of the largest percentage budget increases of any agency." This, in fact, amounted to a research budget increase of $33 million or 13%.
* NSF environmental research would receive an increase of 5% or $16 million. For these two agencies the increase for 1984 would amount to less than 9% -- an amount not much greater than inflationary costs. The 14% announced by the OSTP is reached by means of a 22% increase to the Department of Defense.
* For EPA this new level of support (total $278 million) is sharply reduced from the $347 million appropriated for EPA research in 1981 (see graph).
* For NSF the increase of $16 million will permit only the continuation of the current level of effort.
* For EPA, $19 million of the $33 million increase is assigned to acid rain research. That provides a total of $34 million in this area for EPA.
* EPA's plan calls for substantial resources being assigned to monitoring acid rain, its atmospheric transport, effects on materials, land and bodies of water. Very little support is planned for substantive research into basic causes and possible prevention.

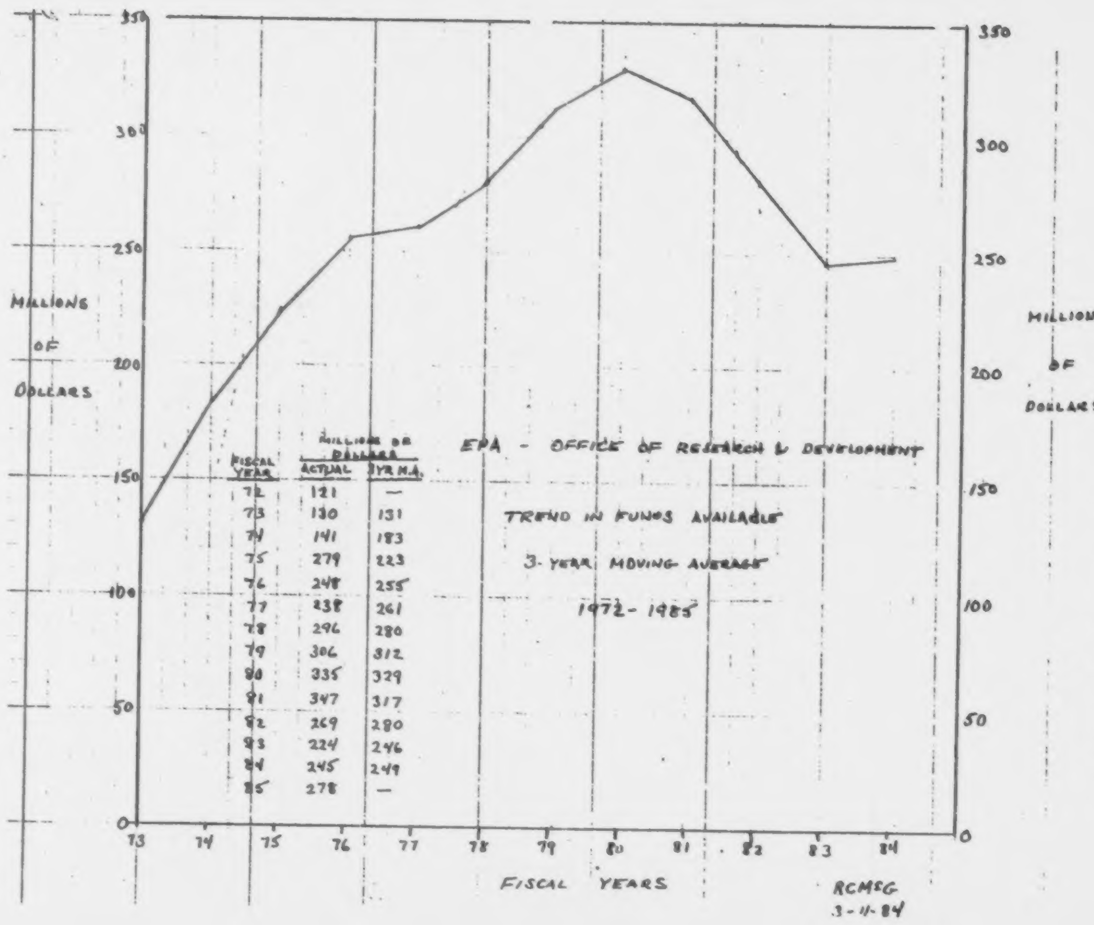
* None of this acid rain effort, and only $500,000 of the $33 million increase, is assigned to basic, long range research grants. This program which can attract the Nation's premier academic scientists is scheduled to receive only 6.4% of EPA's research, a 50% reduction from the 12.2% assigned in 1982. After accounting for inflation, this will permit a level of effort one-third of that in 1982 (31 new grants compared with 100).

* The Office of Exploratory Research grants program is respected by the Nation's best environmental scientists. It features open competition based on published research needs, selection of meritorious projects by peer review panels of excellent repute and reliable, sustained support for approved projects. Since its start in 1980 the program has resulted in a very commendable number (more than 300) scientific reports in the peer-reviewed scientific literature. No other research support program in EPA attracts the best university scientists to work on the important problems of protecting the quality of our environment.

**NASULGC believes that EPA should support a substantial effort of basic research into the acid rain problem and, if necessary, curtail the scope of monitoring. The complex chemistry and meteorology wherein lie the explanation for causation and potential control of acid rain are a more profitable avenue of research than catching rain drops and collecting mountains of pH measurements.

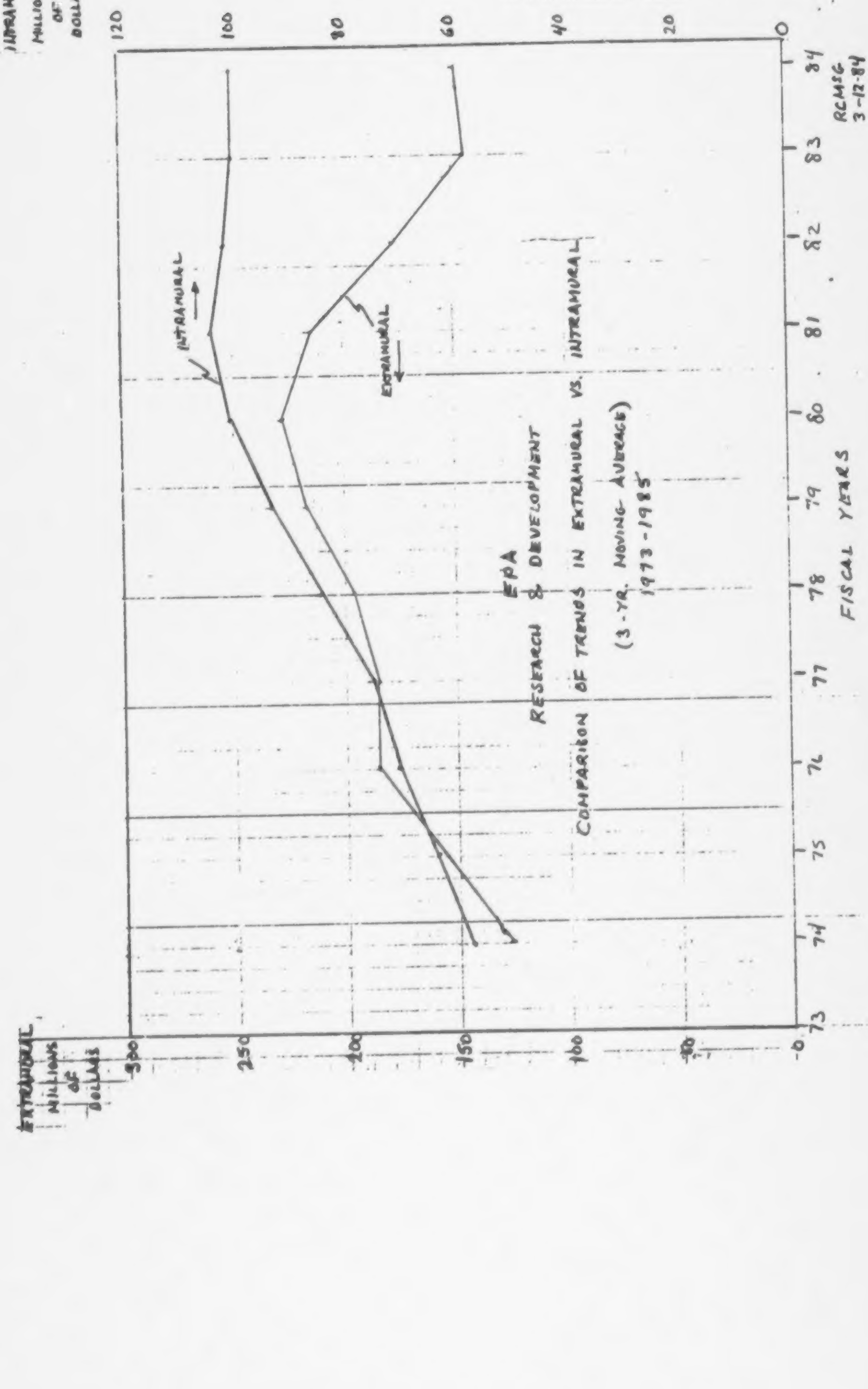
**The Office of Exploratory Research grants program should be charged with the responsibility for at least 15% of the acid rain research effort in addition to its present charge. ($5.1 million for acid rain, $13.4 million for other work.) That would result in a 10.7% level of effort through the use of long range research grants.

A. Trends in EPA [illegible] R&D Funds



FISCAL YEAR	MILLIONS OF DOLLARS ACTUAL	 3 YR M.A.
72	121	—
73	130	131
74	141	183
75	279	223
76	248	255
77	238	261
78	296	280
79	306	312
80	335	329
81	347	317
82	269	280
83	224	246
84	245	249
85	278	—

B. Comparison of Trends in Extramural vs. Intramural Funds



C. Comparison of EPA Research Funds with Federal R&D Obligations (Chart from Special Analysis K)

FEDERAL R&D OBLIGATIONS

	(Billions of Dollars)					Percent Change	
	FY81	FY82	FY83	FY84	FY85	85/84	85/81
Total Federal R&D	$35.0	$37.6	$39.5	$46.7	$53.1	14%	52%
Total Defense R&D	$16.5	$20.9	$23.2	$28.1	$34.2	22%	107%
Total Basic Research	$5.1	$5.4	$6.4	$7.2	$7.9	10%	55%
Basic Research by Agencies Supporting Primarily Life Sciences	$2.4	$2.4	$3.0	$3.3	$3.5	5%	46%
Basic Research by Agencies Supporting Primarily Physical Sciences and Engineering	$2.7	$3.0	$3.4	$3.9	$4.4	14%	63%
Total Research in E.P.A.	$ .347	.269	.223	.245	.278	13%	-20%

Source: Special Analysis K: Research and Development
The Budget of the United States Government

APPENDIX A 2-2-84
PS-5/14

Office of Research and Development

FY 71-85 - Total Perm. Positions/Perm. Workyears
- Total Dollars
- Extramural Dollars

Fiscal Year [1]	Per. Pos./Perm. Workyears 71-78/79-85 [2]		Total Dollars $ (000) [3]		Extramural Dollars included in Total $ (000)
1971	Not Available		Not Available		Not Available
1972	1867	(142)	121.0		Not Available
1973	2050	(135)	129.6	(122.5)	78.6
1974	1926	(112)	141.2	(121.8)	86.6
1975	1862	(112)	278.7	(218.6)	211.4
1976	1832	(82)	248.3	(181.5)	177.2
1977	1820	(89)	238.5	(163.0)	163.4
1978	1839	(105)	296.4	(188.3)	215.0
1979	1823.7	(80.4)	305.5	(183.7)	209.9
1980	1849.7	(52.0)	335.0	(193.0)	230.0
1981	1705.2	(52.0)	347.4	(173.1)	244.7
1982	1560.3	(52.0)	269.3	(127.3)	164.4
1983	1420.4	(52.0)	223.5	(102.6)	123.6
1984	1380.8	(52.0)	244.9		150.1
1985	1481.1	(52.0)	278.0		172.4

[1] 1983 and prior are year-end allowances, 1984 is Current Operating Plan (1/1/84), and 1985 is Request from President's Budget.

[2] Numbers in parentheses are reimbursables included in Total.

[3] Numbers in parentheses are resources expressed in 1972 Constant dollars. Deflators used:

73-105.8 76-136.8 79-166.3 82-211.6
74-115.9 77-146.3 80-173.6 83-217.9
75-127.5 78-157.4 81-200.7 84 & 85-Not available

(Source: U.S. Department of Commerce, Survey of Current Business)

TOTAL FTE 1985

DISTRIBUTION OF RESEARCH

MEDIUM	'84	%	'85	%
Air	451.1	26.1	464.6	26.0
Water Quality	328.8	19.1	325.4	18.2
Drinking Water	186.4	10.8	191.4	10.7
Hazardous Waste	206.6	12.0	227.5	12.7
Pesticides	108.3	6.3	109.3	6.1
Radiation	22.0	1.3	22.0	1.2
Interdisciplinary	64.2	3.7	68.2	3.8
Toxics	188.9	10.9	193.3	10.8
Energy	65.9	3.8	72.6	4.1
Program Management	60.7	3.5	57.7	3.2
Superfund	42.5	2.5	58.0	3.2
	1725.4	100.0	1790.0	100.0

TOTAL $ (M) 1985

DISTRIBUTION OF RESEARCH

MEDIUM	'84	%	'85	%
Air	62.3	24.9	65.2	23.5
Water Quality	24.8	9.9	26.8	9.6
Drinking Water	23.8	9.5	23.1	8.3
Hazardous Waste	32.3	12.9	34.8	12.5
Pesticides	6.3	2.5	8.0	2.9
Radiation	1.8	0.7	2.1	0.8
Interdisciplinary	20.9	8.4	20.4	7.3
Toxics	24.4	9.8	27.1	9.8
Energy	35.9*	14.4	48.5	17.4
Management and Support	8.5	3.4	9.3	3.3
Superfund	8.8	3.5	12.7	4.6
	$ 249.8	99.8	$ 278.0	100.0

*Includes Acid Deposition Supplemental

EPA
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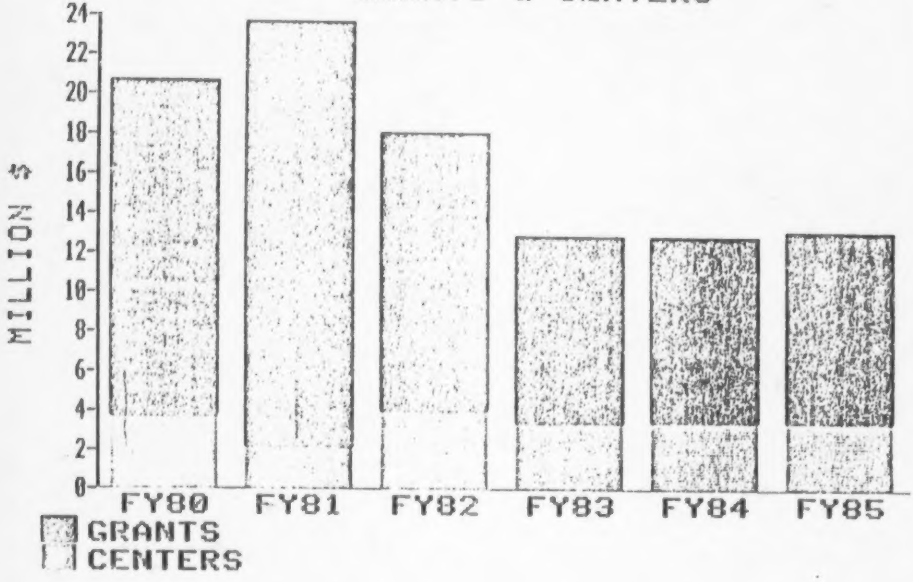
GRANTS & CENTERS



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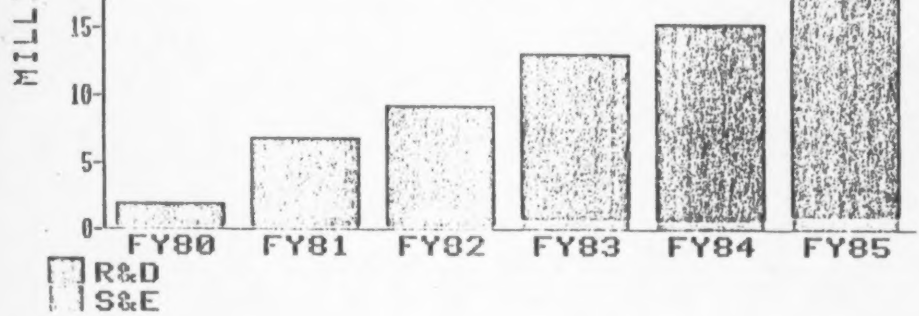

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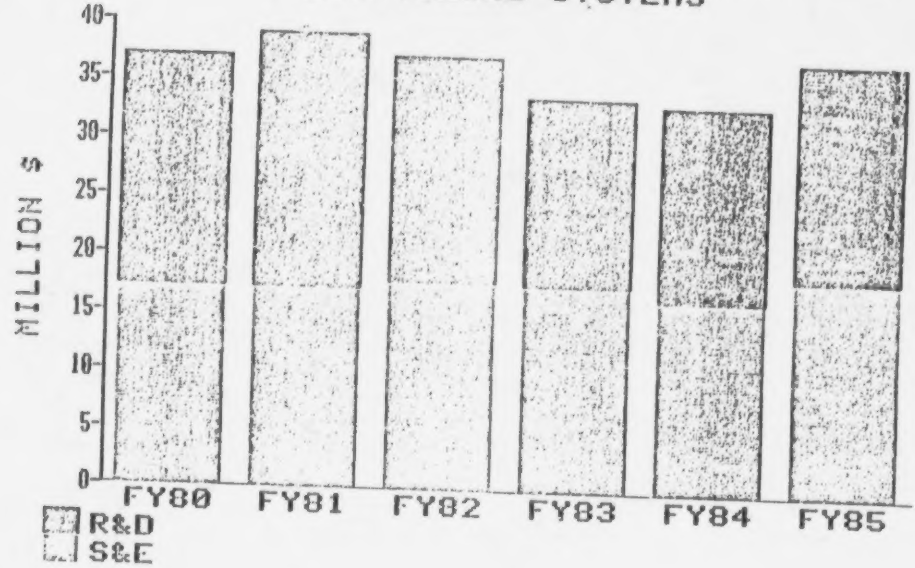

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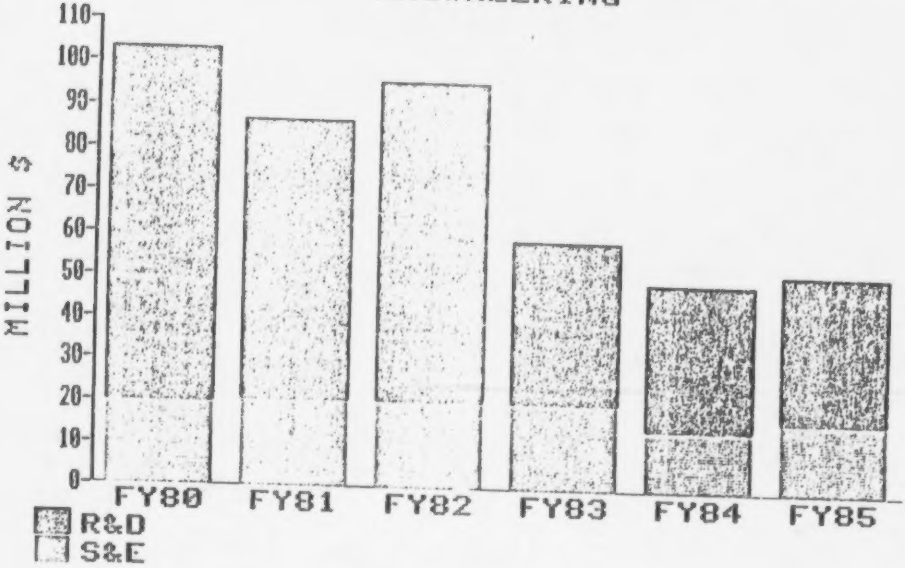

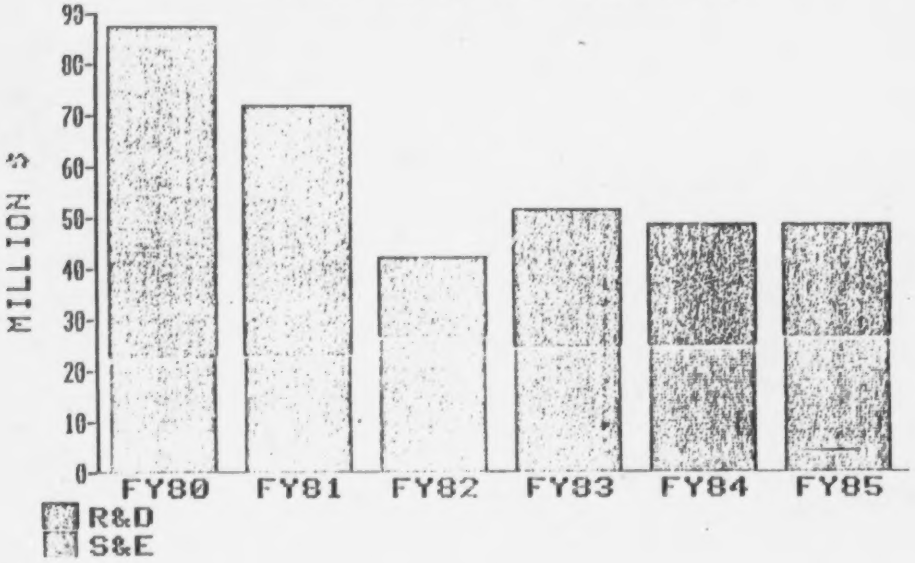

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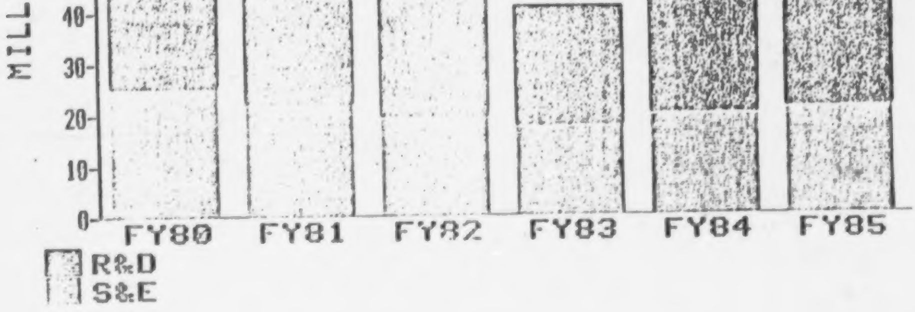

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HEALTH EFFECTS

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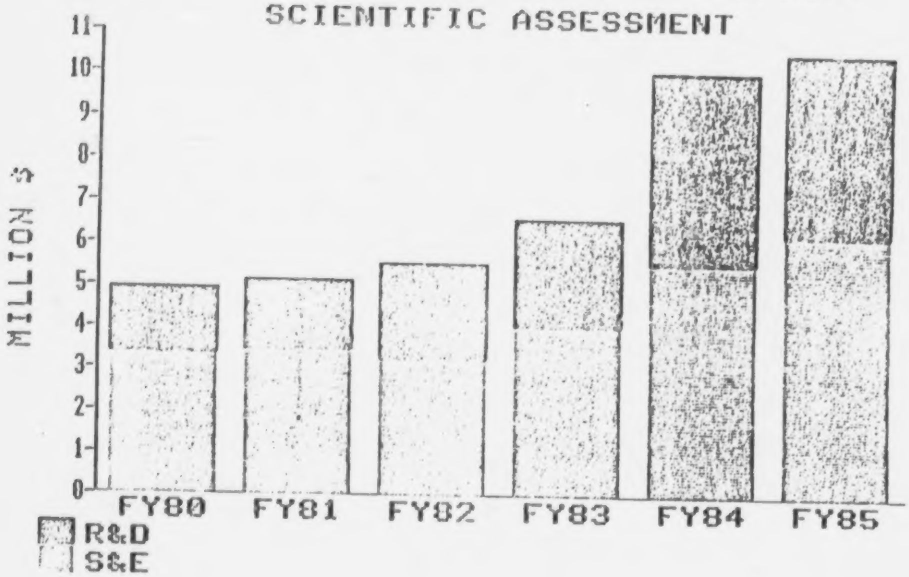
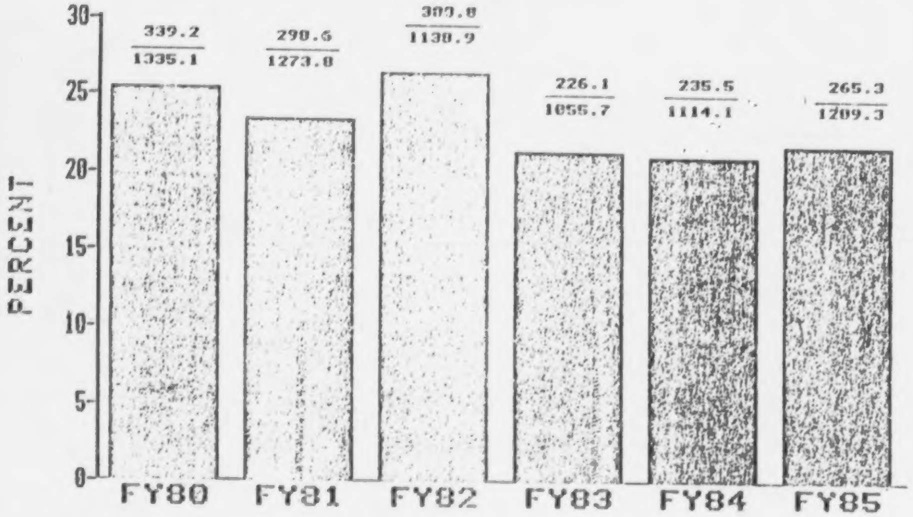
SCIENTIFIC ASSESSMENT

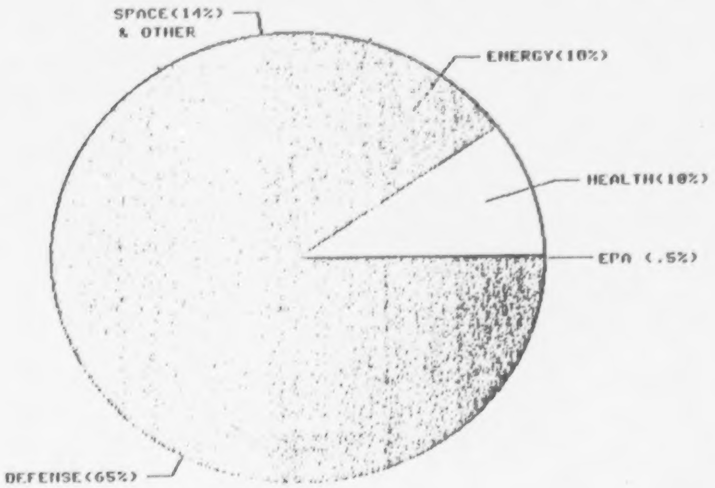


ORD RESOURCES AS A PERCENT OF AGENCY TOTAL



1984 R & D BY MAJOR FEDERAL AGENCIES*

PERCENT (ROUNDED) OF ESTIMATED OBLIGATIONS



*SCIENCE & GOVERNMENT REPORT 1/15/83

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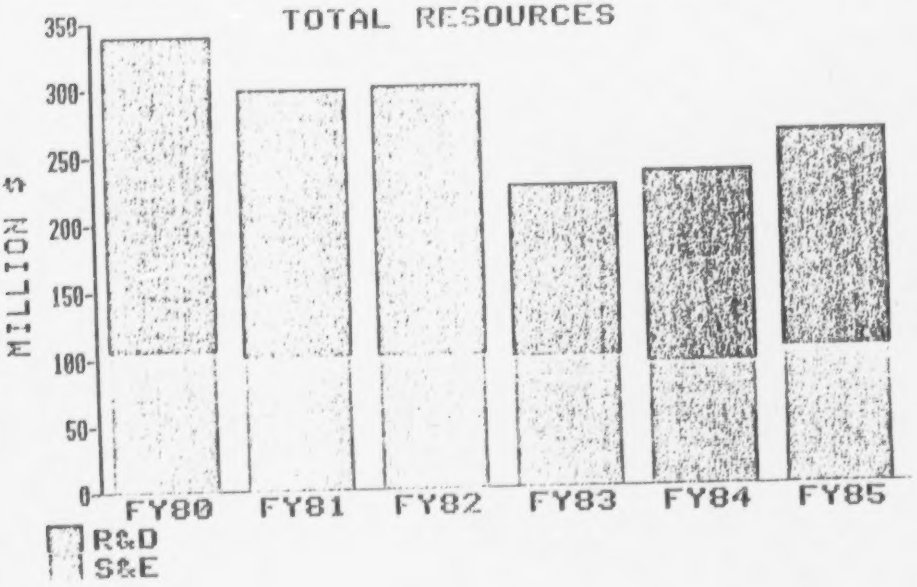
TOTAL RESOURCES



STATEMENT OF DAVE WHITNER, CHAIRMAN, SUQUAXIN ISLAND INDIAN TRIBE, ON BEHALF OF NORTHWEST INDIAN FISHERIES COMMISSION

Senator MATTINGLY. Dave Whitner?

Mr. WHITNER. I am Dave Whitner, chairman of the Suquaxin Island Tribes in western Washington. I am representing 20 tribes from the Northwest Indian Fisheries Commission. A report has been submitted and I would like to summarize the highlights of the issues for the record.

It is well known that Indian people have long been related to the land in a way that is very sacred and that they attempted to protect the environment. We have witnessed over several centuries the demise of the Atlantic salmon, and not only in this country but other countries as well. We are hoping we don't see that same kind of thing occur on the west coast with the salmon there.

Early in the 1970's, the Environmental Protection Agency was established. There were several things that were of national importance. There was a TV ad showing Iron Eyes Cody riding across the country looking sadly at the pollution that was in the land. At this time, however, there is no EPA policy for Indians in this administration. We are asking that be established.

Indian tribal governments control some 30 million acres of land on 288 reservations. Much was ceded, of course, and much was lost in the 1977 Allotment Act, but there are reservations in 26 States, some 288 reservations in 48 States of the continental United States.

We also are responsible for the environment and usual accustomed fishing areas in western Washington. As of this time, we are not aware of any mention of an Indian policy or even the word "Indian" in the EPA fiscal year 1985 budget request.

We would like to suggest that EPA, one, establish an Indian policy; two, that they identify EPA staff concerned with tribal interests; and three, there be an appropriation of funds for tribal programs and that specifically they be Federal funding, not State funding.

Over a long period of time, we witnessed a decline of salmon runs, especially since the 1954 treaties which ceded some 6 million acres in western Washington alone.

However, in 1974, there was the ruling, commonly known as the *Boldt* decision, which gave the right of tribes to 50 percent of harvestable salmon, and then after that, the Indian's Self-Determination Act, again established a policy of Indian control. We witnessed a downturn in the harvest of salmon and it has recently been noted in one of our local papers—SAL Times—a crisis of chinook salmon. That is partly because of overharvesting and partly because of natural resource completion degredation.

We have established over the past 10 years tribal control of fisheries. We have been able to efficiently manage the fisheries and hatcheries. We released in 1982 approximately one-fourth of the salmons from the fisheries in Washington State.

We know, and we are firmly committed to the idea that there needs to be protection of the environment for habitat, especially the spawning salmon. We make a request to this committee for add-on appropriations of $2.3 million. We recognize this is a nationwide concern. We are specifically here talking for the Northwest, western Washington especially, but we recognize the national concern for environmental protection.

We understand that is what you are here for, too, to protect the environment. Thank you.

Senator MATTINGLY. Thank you very much.

STATEMENT OF DAVID BRETZKE, PRESIDENT, RURAL WATER ASSOCIATION OF UTAH, ON BEHALF OF THE NATIONAL RURAL WATER ASSOCIATION

Senator MATTINGLY. Our next witness will be David Bretzke, president of the Rural Water Association of Utah, on behalf of the National Rural Water Association.

Mr. BRETZKE. Mr. Chairman, my name is David Bretzke, and I am the immediate past president of the Rural Water Association of Utah and a member of the National Rural Water Association board of directors for the last 5 years. With me here today is Garry Larimore who is the program manager for the Kentucky Rural Water Association from Bolling Green. We are here on behalf of the National Rural Water Association to thank you and this committee for the support you have given this program in the past and request your continued support for the program in the Environmental Protection Agency fiscal year 1985 budget.

The NRWA training and technical assistance program operates in 33 States and is directed in each State by State rural water associations whose membership is made up of small water systems within that State. These are the rural water folks who have responsibility for the operation of rural water in each State, and they are committed to the continuous protection and improvement of rural water systems within their local communities.

The State governments were offered primacy to enlist their active participation in enforcing the Safe Drinking Water Act. However, after the initial effort to test and monitor the major water supply in these States, it became clear rural water systems provided a special geographic problem.

While 80 percent of the people were served by large community water systems, the most serious drinking water systems were occuring in those 80 percent of the systems which serve only 20 percent of the people—the rural people. As EPA and the States began to contact these small systems to enforce the testing of the water quality provisions of the Safe Drinking Water Act, they found many systems with part-time operators, uninformed boards of directors, cash flow that allowed for minimal or no maintenance, and, in general, a very defensive attitude toward EPA's intrusion into their business. In many States, the Safe Drinking Water Act and the small rural water systems were headed toward a confrontation that nobody would win.

It is within this atmosphere that the NRWA rural water training and technical assistance program was created and has grown. The overriding thesis of the program is that the best way to improve the quality of the drinking water in rural areas is to improve the quality of water supply, the quality of water system operation, maintenance and management, and to encourage a strong local commitment to charge the water rates needed to pay for a good quality water system.

The objective of the NRWA program in each State has been to assist and guide local water system personnel and boards of directors to commit to a method of operation that will allow their systems to meet all the requirements of the Safe Drinking Water Act as well as prepare for having a strong and healthy rural water supply in the future.

The way Utah and the other NRWA States have approached this objective is to have rural folks help rural systems to solve their own rural water system problems.

The methods used in the program are simple and straightforward. The program manager, such as my partner here, in each State spends at least 10 days a month in the field visiting rural water systems in response to requests for help from the water systems, from State agencies, or the State Farmers Home Administration office. In some cases, the program manager simply drops by to visit.

In system after system, the problems of poor water samples, extensive water loss through leaks, nonworking chlorinators, ineffective management practices are discussed and solutions found. Program managers and other State association members make these visits with the objective of increasing the capabilities of each small system to improve its operation and to allow it to stand on its own financial and management capabilities.

To back up this in-the-field technical assistance, at 12 rural water training workshops are held each year in each State. It varies from the parts of the States. These workshops are held in small towns throughout the State and include administration and, sometimes, the regional EPA office. Participants are mostly small system operators, mostly part-time, as well as some water system board members and bookkeepers.

It is at these sessions that a majority of the attendees receive their only information about the Safe Drinking Water Act and the only advice on how to improve the operation of their water systems. They will take the one day off to attend the session because they depend on it to provide the information they need for small water system operations. We invite the members of this committee to attend one of these sessions to get a feel for the strong feeling rural folks have about these 1-day workshops.

It is the person-to-person contact on a broad grassroots level that is the most important. For example, in the 12 months from March 1, 1983, through February 29, 1984, State associations conducted nationally 425 workshops and provided training for 13,128 rural water small system operators representing 5,700 systems.

With the constant turnover of small system operators, the majority of these persons have never attended water system training sessions. A total of 9,700 on-site technical assistance visits, including 2,600 for compliance with the Safe Drinking Water Act, were also carried out and were normally the only hands-on assistance provided to these systems to help them meet requirements of the Safe Drinking Water Act. The workshops were critical in preventing numerous systems from falling under noncompliance with the Safe Drinking Water Act. We have provided a State-by-State breakout of the workshops and technical assistance for the past 11 months in our report.

While a number of State rural water associations have expanded their programs through State funding and increased contributions from the small systems, the program requires continued EPA financial assistance to be effective throughout the country. The level of EPA funding for each State has never increased, despite the doubling of cost of the program attributable to inflation. This increase in costs has been picked up at the State and local levels.

When the Congress views the vast number of persons, governments, and industries which are covered by numerous environmental laws, there is no other instance when EPA has reached out to such a large group as the rural water systems and found the willingness to work at the grassroots level to meet Federal requirements.

This program has made drinking water enforcement in rural areas a successful commitment. There is much more to do. We are requesting the committee restore and increase the funding to $2.5 million for fiscal year 1985. These funds would provide for the expansion of the program to the States of West Virginia, Idaho, Wisconsin, and Virginia and would increase the EPA contribution to each State program from $49,000 to $59,000 per State. This is the first State association increase from EPA ever and State associations will be expected to continue to increase their share of the program by a similar amount.

Thank you for your help and considerations in the past. We appreciate your confidence in our unique approach for improving the quality of drinking water in the rural areas of the Nation. Both Gary and I are available to answer any questions.

Senator MATTINGLY. Mr. Larimore, did you have a statement for the record?

Mr. LARIMORE. I would like to make one little comment. Mr. Bretzke mentioned I am the program manager of the State of Kentucky. I am actually the one who goes out and helps those systems. I feel like this program is very essential. It meets the needs, meets the grassroots needs.

Just to give you an idea of the cost effectiveness of it, as mentioned, each State gets $49,000 a year. During the last 18 months, our State has a little unique—not really a unique situation, but when these water systems experience a tremendous amount of water loss or leakage from lines, the large majority of our water goes down in the cave areas and they never surface.

In the last 18 months, our association has assisted 94 systems with a leak survey, and we have been instrumental in finding 422 million gallons of water. A conservative cost of 75 cents per 1,000 gallons, which generally is what it costs to produce or buy from another source, it is a savings through those systems of $317,000. And this is just a small portion. It isn't what they would pay a consultant and help with the actual survey.

At the same time, we are teaching those operators how to use those leak detection equipment devices.

Senator MATTINGLY. Were you at the Derby Saturday?

Mr. LARIMORE. No, this is the first time in the last 9 years I haven't made it. I had my own little derby in Bolling Green.

Senator MATTINGLY. Mr. Bretzke, Senator Garn asked me to express his regrets to you for not being able to attend the hearing this morning. The subcommittee is aware of the hundreds of workshops and thousands of on-site visits conducted annually by the National Rural Water Association. We commend you all for your important efforts in this area and certainly give consideration to your request. Thank you very much.

SUBCOMMITTEE RECESS

The subcommittee will stand in recess until the hour of 1:30 p.m.

[Whereupon, at 12:33 p.m., the subcommittee was recessed to reconvene at 1:30 p.m. the same day.]

[CLERK'S NOTE: The following additional materials relating to EPA are provided for the record:]

MEMORANDUM FROM AMERICAN WATER WORKS ASSOCIATION RESEARCH FOUNDATION

TO: Wally Berger

FROM: American Water Works Association Research Foundation

SUBJECT: Water Utility Industry's Plan for Self-Financed Research and Development

During our recent public testimony Senator Domenici requested that we provide the Committee with details of the American Water Works Association Research Foundation's plans to create a self-financed industry capability for research and development.

The attached plan will be presented to the annual convention of the American Water Works Association annual convention on June 10 in Dallas. We are very confident that the general concept will be adopted by the AWWA Trustees and that we can begin to immediately move forward to bring it to reality.

We will keep you informed of developments as they arise. Thank you for your interest and willingness to listen to our case.

THE PROPOSED WATER UTILITY ASSESSMENT

OBJECTIVE:

For the water utilities industry to launch a coordinated, industry sponsored research and development program.

HOW?

Through a user assessment on the drinking water supplied by utilities with 25,000 or more connections opting to take part.

WHO WOULD APPROVE SUCH AN ASSESSMENT?

Local water boards, city councils or, for privately owned utilities, the appropriate state utility commissions.

WHAT KINDS OF ISSUES AND QUESTIONS DOES THIS IDEA RAISE?

(1) Local water utilities want to be shown the value of coordinated industry wide research.

(2) Local boards and public utility commissioners want to know what kind of a scheme they would be buying into if they approve the assessment.

THE RESPONSE OF THE AWWA RESEARCH FOUNDATION

(1) A coordinated program of water industry sponsored research will is providing the kind of hands-on, engineering oriented research which can rarely be secured from EPA. This type of research pays off in dollars and cents to the water utility.

(2) The American Water Works Association Research Foundation will seek legislation in the autumn of 1984 to provide for a referendum among water utilities and also an institutional framework to administer the assessment if the referendum is successful. Participating utilities and their regulatory authorities would then know what they are buying into.

RESULT

The water utilities industry would join the gas industry, the electric industry, and numerous agricultural commodities in raising their own R&D funding and reducing their dependence on federal research dollars.

WHAT CAN THE APPROPRIATIONS COMMITTEE DO TO HELP

Add $1 million to the EPA drinking water R&D budget in FY 85 for industry sponsored research. The money will be matched dollar for dollar and cooperative research with EPA will be continued on projects which would not otherwise be undertaken with EPA's current limited resources. Most important, this will allow the water utilities industry to demonstrate the value of coordinated research which will be the key element in a succesful referendum.

AWWA RESEARCH FOUNDATION

PROPOSAL TO MEMBERSHIP

Referendum Program and Voluntary Research Assessment

June 10, 1984
AWWA Annual Conference
Dallas, Texas

The purpose of this descriptive paper is to introduce to the Directors a long-range funding concept for supporting a comprehensive water supply industry research program. The Directors' reactions and suggestions will be critical to the Foundation's development of the funding strategy. The concept has been endorsed by the Foundation's Board of Trustees. It is now requested that the AWWA Board of Directors endorse the general concept and refer the proposal to the Water Utility Council for detailed evaluation and comment.

The funding strategy revolves around the voluntary inclusion of a research assessment into the base water rates of all major water utilities in North America. The revenue generated by the levy would be dedicated to the water industry's research priorities in the following manner:

- A portion of the revenue would remain with the water utility for use in water research projects of local importance.
- A portion would be allocated to the respective AWWA Section for research of regional priorities.
- A portion would be allocated to the Research Foundation for research of national priorities.

The mechanism that the Trustees have tentatively selected for the implementation of this strategy is federal authorizing legislation which provides for a referendum of major water utilities to determine whether or not a voluntary assessment is viewed as a practical means of financing research. If the referendum is positive, each water utility could then voluntarily include a research assessment into its rate structure. The federal legislation provides the authority, but not a mandate, to include a levy in local rates.

The overall objective of this proposal is to institutionalize a major industry research program, locally and nationally, to ensure that water science and technology keep pace with growth in other fields, thus providing the American public with a reliable supply of water of the highest possible quality and safety, produced and delivered efficiently and economically. This commitment by the industry to manage its own progress and high standards is a worthwhile end in itself; it will also reduce the need for federal controls and expenditures.

Background

Prior to 1982 the Research Foundation's research budget was provided primarily by voluntary contributions at a rate of approximately $70,000 per year. Despite this small budget the Research Foundation sponsored three noteworthy research projects in 1980: alum recovery, air stripping of organics, and a trace organics study.

In 1982, research fees were incorporated into the AWWA billing system. This voluntary fee structure yielded an additional $385,000 per year of research funding. With that increased support the Foundation initiated 21 new projects in 1982 and 1983.

In 1984 the Research Foundation received a $1 million grant from Congress for researching water industry priorities. New work was initiated in 15 major project areas. In requesting this money the Foundation representatives declared that a federal subsidy was not the ultimate solution to industry-sponsored research but rather a means of proving the effectiveness of centralized research to the membership. Congress accepted this concept with three expectations:

- The "seed money" will be used to demonstrate the value of a centralized research organization for the water supply industry.
- Congressional leaders hope that this trial will stimulate the industry to expand its own research efforts.
- In effect, Congress issued a challenge to the industry in providing this $1 million and is watching for the response.

The timing for this effort is critical and the present could not be more opportune. EPA's water supply research budget has been declining steadily since 1979 and as a result, the development of new regulations, which are directly tied to research, has slowed down. Most knowledgeable observers feel that this is a cyclic reduction that will increase again as new contaminants or other water supply issues stimulate public and Congressional concern. This in turn will create more regulation of the water industry by EPA since regulation and enforcement are EPA's primary tools for controlling industry.

This is termed the "regulatory ratchet effect": it moves in only one direction and that's toward more strict controls. Historically the ratchet effect occurs when a new problem is discovered and the alarm sounds. The regulatory agency overreacts; the public is given an exaggerated view of the problem and a rash of new regulations is imposed. Examples of this phenomenon abound.

Present Opportunity

At the present time, the water industry has an opportunity to fill the void created by the reduction in EPA's research efforts. The industry, in a sense, can become self-regulating or at least it can have a much more influential impact on future regulatory designs. Water research programs in other countries and other types of research programs in the U.S. have positively demonstrated that an industry-sponsored research program can supplant federal research, dominate the field, and produce practical benefits to the entire industry and the public.

In essence, the water industry is faced with a serious decision:

- It can respond positively by increasing research and thus generating the future's answers before the questions are raised to the level of public concern and associated regulatory action.
- It can respond negatively or neutrally and allow government research and regulation to continue to dominate the field.

Successful Programs

When considering a comprehensive change it is always enlightening to look at the experiences of similar efforts in other fields. The water industry is fortunate because there are many examples of successful centralized research programs, both in the U.S. and in other countries, which are funded through a direct assessment. Table 1 displays basic information on a sampling of such organizations. These examples all have several things in common: they are successful; their membership is pleased with the return on their investment; fees are based upon unit sales or production; and many of them were erected under national authorizing legislation.

Table I

Structure of Industry Research Organizations

		Budget ($1000)	Funding Program	Research Rate/Assessment	Legislative Authority
AWWA Research Foundation 1982 to Present		455	Graduated Fees	$30 to $4,380 per year equivalent to 2.5¢/connection per year or 0.002¢/1000 gal or 0.01% of sales	No
U.S. Industry-Average	U.S. Organizations	-	-	1.9% of sales	-
Chemical Industry Institute of Toxicology		-	Assessment	0.08% of sales $800,000 per member	No
International Bottled Water Association		-	Graduated Fees	$550 to $35,000 per year 0.15% of sales	No
Gas Research Institute		140,000	Assessment	7.2 mills/Mcf	Yes-FERC
Electric Power Research Institute		300,000	Assessment	0.25 mills/kwh	No-DoE
Cotton		33,000	Assessment	$2.20/bale	Yes-DA
Eggs		7,000	Assessment	5¢/30 dozen	Yes-DA
Wheat		-	Assessment	1¢/100 weight	Yes-DA
Dairy		-	Assessment (mandatory)	Early summer '84	Yes-DA
Barge Industry		-	Assessment	-	Yes
KIWA	Water Supply Research	4,000	Assessment	1.2¢/1000 gal	No
WRC-Great Britain		11,000	Assessment (mandatory)	0.88% of revenue	Yes
WRC-South Africa		5,000	Assessment	0.76¢/1000 gal	No

The importance of these examples is that they document how a centralized research organization can be organized and structured so that it is effective, economically sound and successful. Obviously, industry-sponsored research centers have proven beneficial to U.S. industries, including other utilities, and the same success pattern is evident in other countries specifically for water supply.

Legislative Approach

Legislation is not strictly required to carry out a referendum/assessment program but such authorization is considered to be the cornerstone of a successful effort to organize and implement national cooperation among water utilities. An examination of the various alternatives uncovered the following factors in favor of some type of authorizing legislation:

- Federal authorization demonstrates that an industry-sponsored research program is a matter of national interest and not merely a fund raising effort.
- Authorizing legislation establishes the approach by law thus eliminating any question about the legality of the concept.
- It creates a standard format and procedure for consideration by the membership.
- Federal authorization creates a legal and institutional framework for participating utilities to include the levy in their rate structure.
- Congress has provided similar legislative authority for other commodities and may be willing to design a program for the water supply industry.
- Previous legislation, primarily related to agricultural commodities, while not an exact blueprint for the water industry, provides parallels that can be used for guidance.

The Foundation's approach to Congress will emphasize the fact that the water supply industry is dissatisfied with the federal budget for research and the associated regulatory focus, and that it desires to become more involved in research and self-regulation. In a time of decreasing federal research funding an industry sponsored research effort can supplement and even supplant much of EPA's technological research, particularly in the area of hands-on utility-oriented research. It should be noted that the Congressional authorizing process is very complex and time consuming; it is estimated that this approach may require a minimum of 2 or 3 years of effort.

Elements of Proposal

There are six features or elements which constitute the essence of the referendum and assessment program. **First**, the program initially would be applicable only to water utilities having more than 25,000 service connections. The rationale is that the large utilities receive the greatest direct benefit from an active research program; it also limits the number of members with which to deal. The current research fee schedule would continue for smaller utility and other categorical members of the Foundation; the Foundation would design and implement the assessment billing separate from the current AWWA dues program.

Second, there would be a referendum among the water utilities to determine whether or not they support the concept of an assessment to provide research funds for themselves and a national center. The Foundation would develop the necessary materials to explain the program and its benefits to utility managers and for presentation to local boards and councils. **Third**, if the national referendum is successful then each individual utility will have the option to impose or not impose the levy on its consumers. It is emphasized that this is an entirely voluntary program and that the legislation merely provides authority for including the levy in the rate base.

The **fourth** element is that the revenue is to be distributed as follows:

- A portion remains with the water utility to be dedicated to local water supply research needs;
- The remainder is forwarded to the Research Foundation to be used for national research priorities and a portion of these funds will be credited to local Section research projects.

Fifth, the amount of the assessment would be determined annually by a panel composed of officials from the involved agencies and organizations. **Lastly**, the Foundation's plans and budget would be coordinated with the federal government in order to prevent wasteful duplication. Obviously, all of these elements are subject to change or modification as the concept is refined.

Revenue

Table II provides an indication of the potential revenue that is available from such an assessment program. It is astonishing to note that a one penny assessment would create a research funding level of over $60 million, assuming that all of the 215 systems with over 25,000 service connections participated in the program.

Table II

Potential Revenue from Research Assessment AWWA Utility Membership

Size 1000 Connections	Number Utilities	Combined Production[a] Million-1000 gal/year	Revenue Per Year at assessment[b] of 1¢	0.5¢	0.1¢
200+	19	2,328	$23.28M[c]	$11.64M	$2.33M
100-200	35	1,934	19.34M	9.67M	1.93M
50-100	62	972	9.72M	4.86M	.97M
25-50	99	810	8.10M	4.04M	.81M
Totals	215	6,044	$60.44M	$30.22M	$6.04M

(a) 1981 Operating Data

(b) Assessment per 1000 gallons

(c) Million

Benefits

Other officials currently involved in such assessment programs indicate that the benefits of the approach include a broad base of support, an equal rate of assessment of all participants, a periodic review of the levy, direct and immediate local benefits, and a substantial, nationally coordinated research program. To this listing the Foundation can add that the Section allocation will ensure attention to regional problems.

Participating utilities will benefit immediately by having a predictable, reliable budget for local research and development needs. These dollars will be available for testing new treatment processes, investigating distribution system problems, studying persistent water quality concerns, comparing various types of equipment, pipes, chemicals, paints and coatings, etc.

As with any program there are definite advantages and disadvantages to be considered. The Trustees examined these very closely and felt that the positive aspects of a legislative approach to a voluntary research assessment far outweigh the negative aspects. The major advantage is that this approach has a proven and successful track-record; historically Congress has supported this type of referendum and assessment package. Congress has been, and is, involved in drinking water research appropriations and is examining means of reducing federal expenditures; this proposal from industry would be seen as a responsible and praiseworthy initiative. Other merits of the proposal, from a national perspective, are that it provides revenue-sharing as well as cost-sharing and that it would remove research funding from the general federal tax base and place it upon the users who benefit both directly and indirectly from the research. As indicated previously, authorizing legislation provides local utility managers with a clear and coherent national plan, backed by the endorsement of Congress and the White House, to present to their local boards/councils in support of a research and development assessment. Finally, this proposal has no negative impact on AWWA; on the contrary it is an opportunity for the Association to demonstrate leadership and foresight in behalf of the industry.

The potential disadvantages are minor. First there is the expense to the Research Foundation for the pursuit of the authorizing legislation which is admittedly a tedious and perhaps lengthy proposition that may or may not win the support it deserves. Then there is the argument that Congress is being requested to become involved in an internal water industry concern. For the reasons cited above the Trustees feel that Congress' attention would not interfere with the industry but rather strengthen its research program. Finally, some utility managers may not feel comfortable going before their board or council to request a rate increase for research. The Trustees firmly believe that the results of the national referendum will provide a supportive context; back-up information and assistance will be supplied.

Conclusion

This is an historic moment for the industry and the Association. The times have offered us an opportunity to step forward with a major proposal to ensure scientific and technological progress in our field, while reducing our dependence on federally funded research. Every participating community will benefit immediately by having a continuing source of funds to address local problems. The central research program will give the industry command of its future direction. Precedents for our proposed approach prove its soundness. Already established by the Association, the Foundation is a ready mechanism to carry out the industry's national research effort. All that is required at this time is the moral support and encouragement of AWWA.

Recommendation

The Board of Trustees of the Research Foundation has directed the staff to further refine and develop this concept for presentation to the membership and for preliminary consultation with Congressional staffs. It is requested that the AWWA Board of Directors endorse the general concept and refer the matter to the Water Utility Council for detailed evaluation of the proposal and refinement of the program design.

LETTER FROM CHARLES L. BOOTHBY, EXECUTIVE SECRETARY, NATIONAL ASSOCIATION OF CONSERVATION DISTRICTS

April 24, 1984

The Honorable Jake Garn
Chairman, Subcommittee on HUD-
Independent Agencies
Senate Committee on Appropriations
U.S. Senate
Washington, D.C. 20510

RECEIVED

Dear Chairman Garn:

The National Association of Conservation Districts, at its annual convention in February 1984, voted to recommend federal appropriations for certain programs of the Environmental Protection Agency. Our recommendations are as follows:

AGENCY AND PROGRAM	FY 1984 Budget Estimates	FY 1985 Budget	NACD Recommendation
ENVIRONMENTAL PROTECTION AGENCY			
1. Water Quality Mgt. Planning (205j)	24,400,000	24,400,000	24.4
2. Clean Lakes Prog. (314)	5,000,000	2,500,000	5.0
3. State Prog. Grants (106)	54,200,000	54,300,000	54.3
4. Nonpoint Source Implementation			150.0

EXPLANATORY NOTES

Note	Remarks
1.	Grants to states for development of water quality plans. The Clean Water Act Amendments of 1981 authorizes up to 1% of the Construction Grants Program to be used for water quality planning, including nonpoint sources.
2.	Grants to states for pollution control on freshwater lakes, including necessary upstream land treatment. Emphasis on control of nutrients, toxics, and sediment.
3.	Grants to states for overall management of water quality programs, including monitoring, grants to management agencies.
4.	Assumes passage of nonpoint source control legislation.

Please consider this letter a Statement for the Record from this association.

Sincerely,

Charles L. Boothby

Charles L. Boothby
Executive Secretary

STATEMENT OF THE PUBLIC AND SCIENTIFIC AFFAIRS BOARD OF THE AMERICAN SOCIETY FOR MICROBIOLOGY

The Public and Scientific Affairs Board (PSAB) of the American Society for Microbiology (ASM) wishes to submit the following comments on the Administration's budget proposal for exploratory research at the Environmental Protection Agency (EPA) in Fiscal Year (FY) 1985 for the record and consideration by the Senate Appropriations Subcommittee on HUD-Independent Agencies.

First, we would remind you that the ASM is the largest single biological life science organization in the world with an active membership of over 31,000 microbiologists working in academic, industrial, and government laboratories throughout this country and elsewhere. Since some microorganisms are agents of pollution and others contribute to pollution abatement, the ASM and its membership have conscious and continuous interest in EPA research functions and programs. The ASM is of the firm opinion that a national strategy for environmental protection must include as an essential element a well-funded, long-range program of exploratory research based on a system of peer review to assure scientific merit. This opinion prompted us to write previously expressing distress at the fate in recent years of the EPA effort in research and development.

The EPA grants program, which has experienced drastic reductions in funding, is of particular interest to our membership. It was budgeted originally at $26 million per year. Although this amount is not at all generous, considering the complexity of the country's environmental problems, it has experienced shrinkage at a degree strikingly clear from data tabulated below:

Research Grant Support

Year	Millions	New Awards
1981	$21.8	-
1982	$13.0	100
1983	$ 9.5	45
1984	$ 9.5	26
1985	$10.0	36

In the five year interval of 1981-85, dollar support for research grants has decreased to less than one-half of its initial level and numbers of new awards have decreased 64 percent. We are convinced that those reductions in money and in numbers of new awards have discouraged highly qualified investigators from addressing environmental problems of public importance, and prompted them to turn away from the EPA and to look elsewhere for recognition and support. Nevertheless, with the reappointment of William D. Ruckelshaus as Administrator, we, as many others, believe things at the EPA will change and change rapidly. We are impressed by his accomplishments as first Administrator of the Agency, and recognize that from the time of his reappointment, Mr. Ruckelshaus has worked with some success to strengthen the EPA research budget.

We are pleased that the President's FY 1985 budget proposal would increase support for EPA research and development by approximately $33 million. However, that level of funding is still 24 percent less than the 1981 budget. Moreover, we estimate that no more than an additional $0.5 million of the $33 million increase will be available for research grant support; a sum which translates to only 10 possible additional new awards in 1985. This commitment is much too meager for Mr. Ruckelshaus to proceed as indicated in his March 14, 1984 statement to the House Committee on Science and Technology, " ... to strike the proper balance between shorter and longer term research." In his statement, Mr. Ruckelshaus also volunteered the " ... estimate that over 20 percent of our (EPA) total research funds is devoted to long-term projects." His 20 percent estimate is based on the requirement established in May 1983 by the House Committee on Science and Technology that " ... directs the Administrator to obligate and expend at least 20 percent of the funds appropriated ... for long-term environmental research and development." That is reassuring. However, we would be interested in an accounting of how the 20 percent was arrived at: What programs are included and what criteria are used to differentiate long-term from short-term projects?

We strongly recommend that in FY 1985 research grant support at the EPA be reestablished at the original level of approximately $26 million, and that in FY 1986 the sum be increased to twice that amount. An expenditure of over $50 million is not excessive if the nation is to have a strong research program capable of responding to present and anticipated needs for knowledge in the environmental sciences as they relate to human well-being.

Finally, we wish to express agreement with the areas described as deserving of increased research support by Mr. Ruckelshaus in his March 14, 1984 statement to the House Committee on Science and Technology. Included were health and risk assessment, methods to control and manage toxic and hazardous chemicals, engineering to support current and future regulatory activities, quality assurance of environmental data, and research to understand the causes and effects of acid deposition. However, we regret this list of key research areas does not include an explicit statement of priority for programs designed to increase understanding of the environmental implications of genetic engineering. We are of the opinion that the EPA should be the lead Agency in funding research relating to the environmental effects of products of genetic engineering. Biotechnology is advancing at a remarkably rapid rate, and there is need to assess and to plan to manage any associated risk, if the public is to enjoy the benefits of genetic engineering with a minimum of delay.

We welcome this opportunity to express these thoughts and we are prepared to work with you in any way that may be helpful.

STATEMENT OF THE ASSOCIATION OF STATE AND TERRITORIAL WASTE MANAGEMENT OFFICIALS

LETTER FROM WILLIAM D. RUCKELSHAUS, ADMINISTRATOR, ENVIRONMENTAL PROTECTION AGENCY

MAR 1 1984

Honorable John H. Chafee
Chairman, Subcommittee on
  Environmental Pollution
United States Senate
Washington, D.C. 20510

Dear John:

Thank you for your committee's letter of August 3, expressing your interest in Subtitle D of the Solid Waste Disposal Act. I apologize for the delay in responding. As you know, under RCRA State and local governments are primarily responsible for supporting solid waste programs. However, based on recent Congressional concerns expressed in RCRA reauthorization, the Agency is forming a task force to evaluate the nature and extent of environmental problems potentially caused by solid waste landfills and to determine whether a change in policy is appropriate.

In response to your request, the following is the Agency's best estimate of the costs required to complete the solid waste activities specified in your August 3 letter. Further explanation of these estimates follows.

	EPA		States
	FTE	$(M)	$(M)
Complete Open Dump Inventory			$160 - 200
Closing or upgrading open dumps			$470.0
Completing/implementing state solid waste management plans			$2.5
Federal enforcement	unknown		
Revise sanitary landfill criteria	16	$3.3	
Solid waste permit program			$40.0
Technical assistance and guidance	40	2.0	
Total	56	$5.3	$672.5 - 712.5

Complete Open Dump Inventory

Your letter refers to the February 1983 testimony of Richard Valentinetti of the Association of State and Territorial Solid Waste Management Officials. Mr. Valentinetti indicated that 23 States had completed the open dump inventory. Our information suggests that few States have completed the inventory if the term "complete" refers to evaluating all solid waste facilities. It is likely that his comment was directed to the States' focus on landfills that dispose of household and commercial solid waste. Most States have concentrated their efforts on such landfills and have evaluated only a very small percentage of the industrial waste landfills, surface impoundments and land spreading facilities.

We estimate, based on a 1979 survey, that there may be as many as 300,000 disposal facilities subject to the Subtitle D requirements. The vast majority of these are surface impoundments. Approximately 10,000 solid waste facilities have been evaluated for the open dump inventory. The open dump inventory currently lists 2,081 open dumps reported by the States. It is important to note that a State may list a facility as an open dump for violating any of the Criteria for Classification of Solid Waste Disposal Facilities and Practices (40 CFR Part 257). Many of the facilities which the States have evaluated have not been assessed against all the criteria. In fact, most of these facilities have not been evaluated with respect to ground-water impacts.

If we assume 300,000 disposal facilities are subject to the Subtitle D requirements, $160 to $200 million would be needed for the States to complete their evaluations of facilities for the open dump inventory. This estimate assumes that the criteria would be amended to require ground-water monitoring (i.e., installation of wells, sampling and analysis) to be carried out by the owners or operators of the facilities. It assumes that all operating facilities would be evaluated against all criteria but does not include subsequent State involvement in enforcement, remedial action, or facility closure.

Completing/Implementing State Solid Waste Management Plans

The other major activities under the current Act are completing and implementing the State solid waste management plans. At present, one half of the States have EPA-approved State plans, and all but three of the others have drafted or adopted their plans. States received grant funds for several years to develop their plans (including upgrading their facility standards and permitting and enforcement programs). However, if the criteria are revised, States would need to similarly upgrade their regulations and make corresponding changes to their State plans. If this took one workyear per State, $2.5 million would be needed.

Closing or Upgrading Open Dumps

Of chief importance in implementing the plans is closing or upgrading the open dumps. To accomplish this task, States must conduct facility evaluations and follow-up enforcement actions. We estimate that about 20 percent of the facilities evaluated to date have been determined to be open dumps. Most of those were not evaluated for ground-water impacts. If 20 percent of the remaining facilities were determined to be open dumps (60,000 facilities), $470 million in State funds would be needed. This assumes an average of one-quarter workyear per non-complying facility for such activities as facility inspections, assessing the adequacy of facility monitoring systems, reviewing monitoring data, and pursuing appropriate facility closure or enforcement measures to obtain compliance.

Federal Enforcement

As with the Subtitle C program, under RCRA the majority of the work would be completed by the States. However, the number of States willing and able to carry out such an undertaking is unknown. S. 757 would direct EPA, in the absence of a participating State program, to enforce the open dumping ban and the criteria. We currently do not have an estimate of the level of effort required if the enforcement burden fell to EPA.

Revised Sanitary Landfill Criteria

S. 757 would also direct EPA to revise the sanitary landfill criteria within two years to reflect improvements in the state of technology and to account for the potential receipt by such facilities of hazardous waste in household waste, from small quantity generators, and from illegal dumping. The revisions are to require ground-water monitoring and other controls or corrective actions, as appropriate, to meet the threat of hazardous waste disposal. In revising the criteria, EPA would need to consider the appropriate controls for different types of facilities, the type or types of wastes accepted, and locational considerations. To conduct the necessary technical and economic studies and revise the criteria would cost about $.5 million for 16 workyears of effort and would require about $2.8 million in contractor support. Even at this level of effort, the Agency would not be able to meet the two year time frame specified in the bill.

Solid Waste Permit Program

Another requirement of S. 757 is for States to adopt and enforce a permit program to assure facility compliance with the revised sanitary landfill criteria. Most States have some form of licensing or permit program in place already, and most of the estimated 19,000 municipal landfills accepting household and commercial waste have State permits. These permits would need to be modified to accommodate the revised criteria. Were two person-weeks to be required for each facility, approximately $40 million would be needed to upgrade these permits.

The requirement in S. 757 for State permits does not specifically address on-site industrial facilities. Some States do not have authority to permit on-site industrial solid waste disposal, while other have "grandfathered" existing industrial disposal facilities. We have no data on the number of industrial facilities lacking permits, the quality of the existing permit (if any), or the possible need for corrective action. Therefore, it is not possible to estimate the costs which would be incurred in dealing with this category of disposal facility.

Technical Assistance and Guidance

Subtitle D authorizes EPA to provide technical assistance to the States to ensure proper and effective implementation of the Subtitle D criteria. There is also a need to develop guidance for the program. These efforts would cost $2 million per year for 40 workyears of effort.

Congressional Time Frames

I would also like to comment on the time frames contained in S. 757. As previously stated, it is unlikely that EPA would be able to revise the sanitary landfill criteria within the two years specified in the bill. Technology and economic assessments alone can be expected to require 24 months. With these efforts as a basis, the revised regulations and associated regulatory impact analysis can then be developed and proposed for public comment. Our experience in promulgating the original criteria leads us to believe that the revisions will be complex and receive significant public comment. Following public review, we would proceed with final rulemaking. The complete time period for promulgation of the revised criteria would likely be 36 months.

Subtitle D Task Force

The Agency is currently forming a task force to evaluate the Subtitle D program and to address the Congressional concerns expressed in the RCRA reauthorization provisions. Until this effort is completed, any statutory changes to the program may be premature.

The Office of Management and Budget has advised us that there would be no objection to the submission of this report from the standpoint of the President's program. Please let me know if I may be of further assistance in this matter.

Sincerely yours,

/S/ BILL

William D. Ruckelshaus

FACT SHEET- State 3011 Grants

ISSUE: Grant fund distribution to the States by USEPA.

PROBLEM: According to preliminary results of a recent state survey, States are experiencing a 70% shortfall in personnel to adequately implement the current RCRA mandated program. Yet, inadequate federal grants is not the only reason States are experiencing shortfalls, the limited appropriated funds are not distributed to the States in total.

WHAT IS CURRENTLY HAPPENING TO SECTION 3011 GRANT DISTRIBUTIONS:

(1) In FY84, USEPA withheld $2.4 million from the appropriated state grants monies to be used as " authorization bonuses." The Agency plans to withhold for distribution as these bonuses $5.5 million in FY85.

States oppose this bonus approach because awarding authorization is a subjective decision by the Agency and a State can not plan to have this money on hand to hire staff and carryout program responsibilities. Moreover, in order to receive such a bonus, the State must have its 25% match available- thus encumbering already scarce funds for an unsure inflow of federal funds.

(2) Both FY84 and FY85 grant guidances which outline to the Regions what they may do with the State grant distribution state that the Regions may reprogram State funds into contractors' pockets.

" Grant funds not utilized by the states are to be reprogrammed into the RCRA implementation contract or the Technical Support for Enforcement at Hazardous Waste Sites (TES) contract to support activities consisten with USEPA's priorities."

According to ASTSWMO's recent survey, States are currently experiencing a 75% shortfall of personnel in the enforcement area. It costs 2 to 2 1/2 times as much for a manyear of work done by a contractor as by a state employee.

The RCRA implementation contract was awarded to A.T. Kearney in FY84 for $2 million.

(3) Quarterly grant distributions are currently being threatened in Regions III and X and are encouraged in the FY85 grant guidance manual. This concept by the Agency of quarterly allotment and release of grant funds to states based on the previous quarter's performance is counterproductive. This method of funding does not allow for sound fiscal management by the states nor does it provide any basis for workload planning, personnel management and program management.

The workloads and accomplishments in a program as complex as RCRA will be cyclical over the period of a year and the timing of activities related to permit development and facility closures certainly do not fall on a quarterly basis. Program performance should be judged on no less than an annual basis for the purposes of providing grant funds for program implementation.

Quarterly release of funds will contribute to State workload demand by requiring grant negotiations foru times a year versus the current once a year. Such discussions are time consuming and take person power out of the field from inspections, permitting and enforcement activities, placing it behind a desk.

RESULTS OF CURRENT AGENCY PRACTICES:

(1) Instead of receiving the appropriated $47 million for implementation of the federal RCRA program by the States, States may only be eligible to receive $42.6 million in FY84. Under the Administration's proposed budget, States could receive only $39 million in FY85.

(2) Under current funding of $47 million, if all funds were distributed to the States, it may take between 16 and 23 years to achieve a quality hazardous waste program as expected by Congress and the Public. If the States were fully funded and received all monies earmarked for them, such a goal could be met within 5 to 7 years.

STATEMENT OF THE MONSANTO CORP.

We the undersigned, drawn from a diverse group of American chemical companies and environmental organizations, strongly urge you to substantially increase the scientific and technical capabilities and resources of the U.S. Environmental Protection Agency (EPA). We believe that an additional $101 million should be added to the Fiscal Year 1985 budget of the EPA's Office of Research and Development (ORD) over and above the budget request submitted to you by the Administration. The reason for presenting this recommendation to you is our deep concern that the scientific base on which the Agency's regulatory decisions are founded has been seriously eroded in recent years by severe cuts in the research and development budget of the EPA.

During the past several months, a study committee of our group, aided by top scientists and research managers chosen from our own organizations has probed this matter in some depth. Part of our investigation has involved discussion of past and present ORD activities with Douglas Costle, former EPA Administrator and Dr. Bernard Goldstein, the current Assistant Administrator for Research and Development. Our specific goals in this effort have been to understand the budgetary, program, and management history of the EPA's Office of Research and Development. Based on that understanding, we have developed the jointly agreed upon conclusions and recommendations presented here to you, the members of Congress, that would place the Office of Research and Development in a more solid position in the years ahead. This would, we believe, help the EPA to carry out its important research and development missions in ways that will better serve the American people. While we are encouraged by the budget increases in FY 1984 and those proposed for FY 1985, these resources are not sufficient to properly do the job.

The following major points support our request for more research and development funds. First, as the attached Figure 1 shows, ORD's financial resources have been highly unstable since ORD was created in the early 1970s. Lack of stability in funding from year to year is debilitating to any R&D program. Many research programs require several years to reach successful completion and therefore require consistent and sound multi-year financial support.

Second, in terms of buying power as measured in constant dollars, the ORD budget for FY 1985 is 15% less than in 1973 when ORD was created (Figure 1). Between 1978 and 1983, the EPA ORD budget decreased by 50%. The present FY 1985 budget as submitted by the Administration is still 39% below the 1980 budget in purchasing power (Figures 1 and 2). During the same periods, Congress has passed a variety of new laws, all of which require additional R&D resources for the EPA. Some of the more important legislated responsibilities placed on the EPA by Congress since 1976 are the following: Resource Conservation and Recovery Act; Toxic Substances Control Act; Safe Drinking Water Act; Superfund (CERCLA); and major amendments to the Clean Air Act, the Clean Water Act and the Federal Insecticide, Fungicide and Rodenticide Act.

Finally, our investigation indicates that the EPA should both expand its resources to meet its statutory obligations and also to address long-neglected problems that require additional financial support. These initiatives are listed in Table 1. They include the research and development aspects of hazardous waste control technology, indoor air pollution, health and environmental effects assessment, and risk assessment methodology. Additional ORD needs that should be addressed are data automation and computerization, planning and expansion of internal EPA research facilities, and support of scientific work in external research and academic centers.

We believe that these initiatives are clearly supportable on the merits and are badly needed now by the EPA and its clients, the American public. We strongly urge you to support these initiatives and include them in the FY 1985 budget you are now considering. These dollars will purchase benefits for our country in improved health and environmental quality, better based regulations for industry, and increased development of scientific expertise in technical and academic centers in the private sector.

We consider our current recommendation that EPA's ORD budget for FY 1985 be increased above the Administration request by $101 million as responsive to an urgent and highly important need. We intend to continue our work together in the months ahead to define the long-term institutional needs of the EPA and look forward to sharing our views with you as we proceed.

Sincerely yours,

John Adams

Mr. John Adams
Executive Director,
Natural Resources Defense Council

William Brown

Dr. William Brown
Acting Executive Director,
Environmental Defense Fund

Louise Dunlap

Ms. Louise Dunlap
President,
Environmental Policy Institute

Lou Fernandez

Dr. Louis Fernandez
Chairman of the Board,
Monsanto

Al Flamm

Mr. Alec Flamm
President,
Union Carbide

Jay Hair

Dr. Jay Hair
Executive Vice President,
National Wildlife Federation

Ed Holmer

Mr. Edwin Holmer
President,
Exxon Chemical Corporation

Jack Lorenz

Mr. Jack Lorenz
Executive Director,
Izaak Walton League

Michael McCloskey

Mr. J. Michael McCloskey
Executive Director,
Sierra Club

Gaylord Nelson

Sen. Gaylord Nelson
Chairman,
Wilderness Society

Russell Peterson

Dr. Russell Peterson
President,
National Audubon Society

Paul Pritchard
Mr. Paul Pritchard
President,
National Parks and Conservation Association

George Sella
Mr. George Sella
President,
American Cyanamid

David Rooke
Mr. David Rooke
Executive Vice President,
Dow Chemical Company

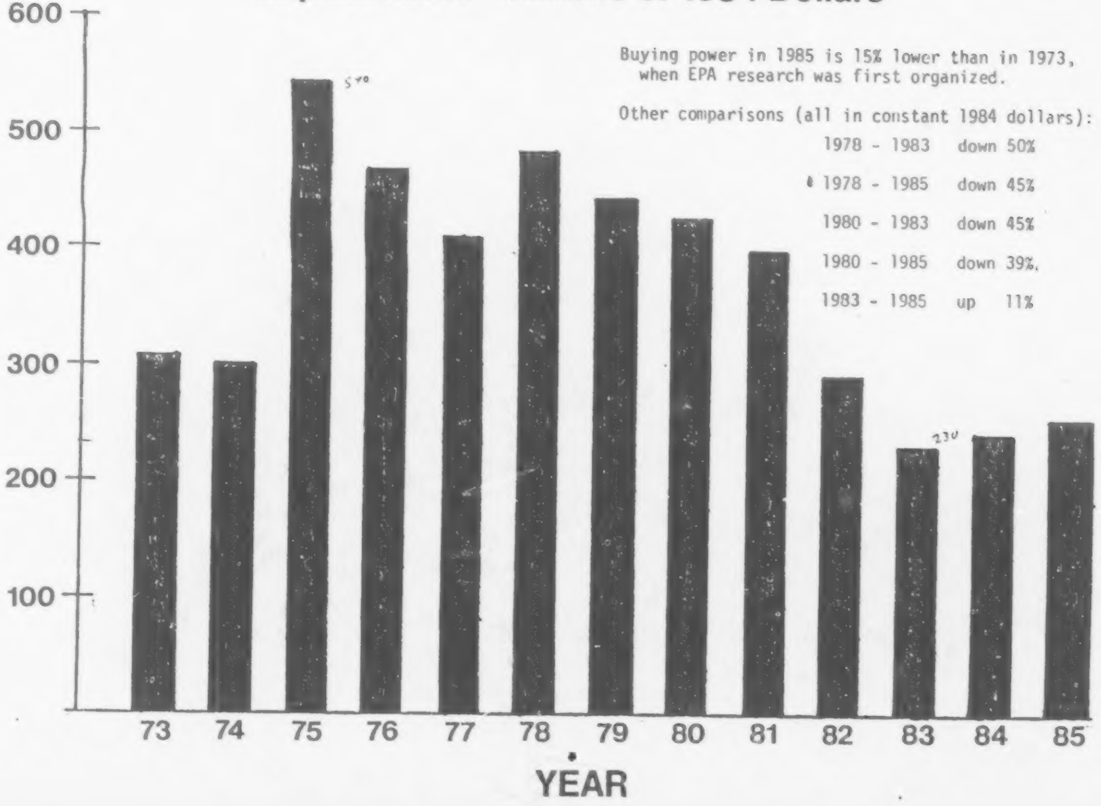
Rafe Pomerance
Mr. Rafe Pomerance
President,
Friends of the Earth

Table 1. Additional R&D Funds to the FY 1985 Budget Request

Initiatives	Current FY 1985 Request ($M)	Additional Funds Needed Over FY 1985 ($M)
1. Alternative and Advanced Hazardous Waste Control Technology	(15)	12
2. Evaluation of Potential Indoor Air Pollution Risks	--	5
3. Health and Environmental Effects Assessment		
A. Exposure Assessment, including Biological Monitoring	--	24
B. Extrapolation of Animal Data to Humans	--	8
4. Risk Assessment for Program Needs	--	15
A. Multi-media Risk Assessment		
B. Integration of Health and Environmental Effects		
5. Groundwater Research, including Assessment, Monitoring and Modelling	(8)	12
6. Development of Scientific Resources in Research and Academic Centers	(13)	10
7. Facilities Upgrading and Construction	--	10
8. Data Automation and Computerization	--	5
	TOTAL	$ 101M

Figure 1

EPA RESEARCH PROGRAM
Expenditures–Millions of 1984 Dollars



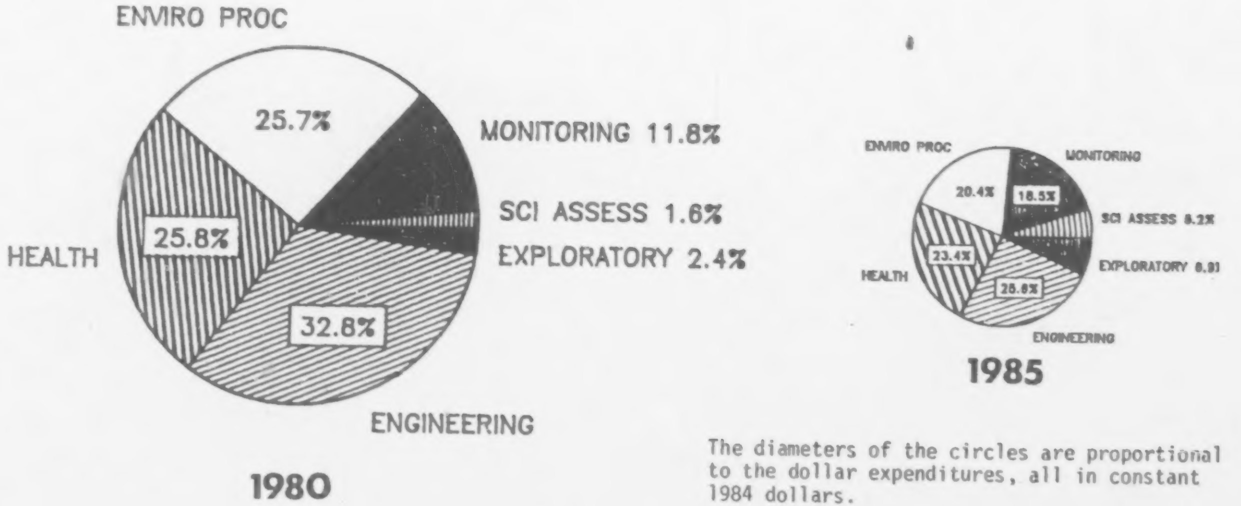
Buying power in 1985 is 15% lower than in 1973, when EPA research was first organized.

Other comparisons (all in constant 1984 dollars):

1978 - 1983 down 50%
1978 - 1985 down 45%
1980 - 1983 down 45%
1980 - 1985 down 39%.
1983 - 1985 up 11%

Figure 2

EPA RESEARCH EXPENDITURES
Type of Research



The diameters of the circles are proportional to the dollar expenditures, all in constant 1984 dollars.

The decreases in Engineering and Environmental Processes are balanced by increases in the Monitoring, Scientific Assessment and Exploratory Research Programs.

STATEMENT OF STEVE PEACE, CALIFORNIA STATE ASSEMBLYMAN

I am Steve Peace, Assemblyman for the 80th Assembly District in the State of California, and I would like to take this opportunity to express my support for Senator Cranston's appropriation request to address the long-standing Tijuana/San Diego sewage problem. The Tijuana/San Diego problem is indeed serious and in dire need of immediate action. It is, in fact, only good fortune which has thus far prevented a dramatic serious health catastrophe.

However, I am compelled also to express to you my concerns regarding the serious border pollution problem involving the New River in Imperial County. I represent both of the areas of concern in San Diego and in Imperial Valley, in addition to chairing the California Assembly Select Committee on International Water Treatment and Reclamation, a panel which was established to explore solutions to border water pollution problems.

Originating in Mexico, the New River flows northward through Mexicali (population 750,000), across the international boundary at Calexico, and then travels 60 miles north to the Salton Sea. While the primary use of the river is for agricultural drainage in both the Imperial and Mexicali Valleys, it is used by Mexicali to also convey discharges of raw and partially treated sewage, toxic industrial wastes, garbage and other solid wastes, animal wastes, and geothermal waste waters out of the Mexicali area and into the United States.

Mexicali currently discharges 25 million gallons per day (mgd) of these wastes into the New River, creating conditions that present a health hazard to the inhabitants on both sides of this border area. Both the State Health Services Department and the Imperial County Health Department have identified a number of viruses and disease-causing bacteria in the New River water. These, according to Imperial County Health Officer Dr. Lee Cottrell, carry the threat of such diseases as hepatitis, typhoid, polio, dysentery, and salmonella. In addition, the banks of the river have become a breeding ground for mosquitos, which increases the threat of the mosquito-borne encephalitis virus.

Relative to toxicity levels, the New River has been designated as the most toxic river in California and the second most toxic river in the United States. In its annual Water Board Survey, which tests major California waters for heavy metals, industrial chemicals and pesticides, the State Water Resources Control Board revealed that the New River and Alamo River (east of the New River) continue to report the highest levels of DDT, toxaphene (both outlawed in California), and other pesticides found in California. PCB compounds are also a major concern in that the National Academy of Sciences (NAS) guidelines for the protection of wildlife and fish have been routinely exceeded in New River catfish samples.

In fact, when 1983 New River channel catfish data were compared to similar statewide samples for the same year, the concentration of PCB was about four times that of the next highest samples. The DDT concentration was greater than all but one other channel catfish value and that of toxaphene was higher than all but two other samples.

Not surprisingly, these conditions have serious environmental implications. Extremely important to wildlife, the New River supports a good riparian, as well as warm water habitat, which sustain many birds, mammals and aquatic resources. For example, the riparian habitat, located near the southern end of the Salton Sea, supports the endangered Yuma Clapper rail. As a rule, poor water quality has had a secondary effect on terrestrial species through the limitation of food sources and a direct effect on aquatic resources of the area. While the number of fish and other ecologically important aquatic organisms are limited by the poor quality downstream from the border, they are virtually excluded upstream closest to the border.

Aside from supporting fish and wildlife resources, the New River is also a critical source of fresh water replenishment for the rapidly deteriorating Salton Sea. Increased salinity of the Sea, already higher than that of the ocean, could soon limit the production of several fisheries.

Based on the above, I trust you are aware of the obvious need for immediate action on the New River pollution problem. To that end, the EPA and the California Regional Water Quality Control Board are currently reviewing several proposed solutions which, after undergoing EPA feasibility studies, should result in an EPA approved and supported plan.

In view of the seriousness of the problem and the history of governmental complacence toward the provision of funds for rural areas such as the Imperial Valley, I feel it is incumbent upon us to reverse this trend and seek to have funds committed for such studies and any preliminary engineering work that is necessary to set a project in motion. These funds, I am sure you will agree, will represent a small investment compared to those being contemplated by San Diego to alleviate the Tijuana River border pollution problems and will result in innumerable environmental and health and safety benefits for the citizens of Imperial County. Failure to do so would, I fear, send a clear message to our rural communities that we in government do not take their problems seriously.

(AFTERNOON SESSION, 12:33 P.M., MONDAY, MAY 7, 1984)

NONDEPARTMENTAL WITNESSES

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

SUBCOMMITTEE PROCEDURE

Senator STENNIS [presiding]. Gentlemen, may we have quiet? Our subcommittee will please come to order. We are taking a stack system today, gentlemen. We are delighted to have the witnesses here that are going to testify now. We had to limit the time in fairness to everyone, so it was decided to permit each witness 5 minutes. Could you please condense your statements, and if you have additional matters you think are important, we can get them put in the record for you.

The first gentleman that has been designated is Mr. Hal Wilson.

Come around, please, Mr. Wilson. The reason we are having to move along on this is there are others coming all afternoon long, and we have to get through. You present your matter in your own way.

STATEMENT OF HAL WILSON, EXECUTIVE DIRECTOR, HOUSING ASSISTANCE COUNCIL, INC.

Mr. WILSON. Thank you very much, Mr. Chairman. I appreciate the opportunity to be able to appear before the committee today and make some comments about the Housing Assistance Council and our activities in rural America. We have submitted a statement for the record and, if I could, I would like to summarize my comments for you and ask that our full statement be included.

Senator STENNIS. Your full statement will be included following your oral presentation, and you summarize as you see fit.

SUMMARY OF STATEMENT

Mr. WILSON. Thank you, Mr. Chairman.

The Housing Assistance Council is grateful for the support that this committee has provided us over the years in terms of funding through the Department of Housing and Urban Development that has enabled us to continue our activities of housing support in rural communities.

As you know, we are a federally funded national nonprofit corporation working to alleviate the housing inequities experienced by the rural poor living in our Nation's communities. With 26 percent of the U.S. population in 1980, rural areas and small remote communities have a disproportionate burden of the country's poverty and inadequate housing.

HAC has addressed these problems for the past 13 years through a variety of programs that I would like to mention to you at this time.

First is the administration of a $4.5 million revolving loan fund for predevelopment loan costs associated with rural housing development. This includes predevelopment costs. These loan funds include support to help small rural communities develop municipal wastewater facilities in their town. We pay for preliminary engineering services for those small communities.

In addition to that, our $4.5 million fund is rounded out by a rural development loan fund in which we assist small builders in rural communities and other builders to produce the housing that will support the needs of low-income families.

Over the last 13 years, we have loaned somewhat over $15 million in rural communities, produced or assisted in producing somewhere around 13,000 housing units, and still have the original capitalization of our fund.

In addition to our revolving loan funds, we provide technical assistance to rural organizations. The reason that our loan activities have been successful we feel, Mr. Chairman, is because we followed our money with technical help. Our loan program is the backbone of our organization, but the technical help that we provide local organizations is what makes the whole thing work.

In addition to our technical assistance, we also provide publications and manuals to local organizations that will give them the wherewithal to do the development that they are seeking to accomplish. All of our manuals and publications are written by the Housing Assistance Council in simple, nonbureaucratic language. We feel they are of inestimable value to small-town developers, Government officials, and development organizations. In addition to low-income groups in the field, the Housing Assistance Council responds to requests from the Congress, from HUD, from the Farmers Home Administration, and from others who are seeking ways to assist low-income families with their housing needs.

Finally, in addition to predevelopment loans and technical assistance, we provide research and information services. We write a biweekly "HAC News" that I am sure comes to your office. For many readers, this small newsletter is often the sole source of housing and community development information about rural America and rural housing programs that they receive.

We also inform them about the legislative and administrative rulings that have been published or are about to be published.

In the area of research, we are examining questions of rural housing affordability. The cost of housing continues to escalate each year, pricing many rural families out of the market. We are currently looking at ways to reduce the cost of the construction of housing for them.

Through our work with a group in Appalachia and some other nonprofit builders, we have found some fairly unique ways of lowering the cost of housing for low-income families. As a result of these studies, we have been working with the Farmers Home Administration to try to get them to make their 502 loans for these reduced-cost houses. I think we are about to succeed. It will make a big difference, I believe, in Louisiana, Mississippi, and some other States in the Southeast.

In addition, we have undertaken a review of the 1980 census to determine the extent of housing needs in rural communities, and we have heard a lot about the movement of housing groups in rural areas. We tried to take a look to see exactly what this means.

To our surprise, we found that the rural poor are, in fact, the working poor. One-half of all the families in poverty in rural areas has at least one family member working. Unfortunately, we have also confirmed that the rate of poverty in rural communities continues to increase and the rate of that housing continues to go up.

Recognizing these needs and how essential our efforts are to serving rural communities to enable them to help themselves, Congress supported our activities over the years by directing the Department of Housing and Urban Development to provide administrative funds for us so we can continue the work I have described.

Our work is ongoing, Mr. Chairman, in the sense we would very much like to keep up with the Farmers Home Administration and the reduced-cost housing programs we have proposed to them. We would like to continue working with them to find a means to use their inventory properties in a creative way, as well as the many other activities that we need to follow up on in this next year.

Mr. Chairman, I would like to thank you again very much for the assistance you and this committee have provided in the past, and I am open to answer any questions that you might have at this point.

Senator STENNIS. We thank you for your interest, what you are doing, and your willingness and fine knowledge of your subject matter and certainly willingness to help out. You know you have put in the record already the facts that you want. If you find you overlooked anything you consider material, why, send it right on in to us and we will take a look at it with the idea of putting it in, if we can.

Last year, this subcommittee recommended that HAC be funded out of S&E account rather than through the Department's research program. Would you recommend we continue this practice during fiscal year 1985?

Mr. WILSON. Yes, I would, Mr. Chairman. We found a very receptive audience in terms of our move and look forward to working with the Office of Housing again next year.

Senator STENNIS. You base this request then on your experience already had?

Mr. WILSON. Yes, we do, Mr. Chairman.

Senator STENNIS. It is well worth the money; is that right?

Mr. WILSON. Yes.

Senator STENNIS. If we provide the $1 million you are recommending for fiscal year 1985, how would your fiscal year 1985 operating budget then compare to fiscal year 1984?

Mr. WILSON. This would increase our operating budget by $50,000, Mr. Chairman, which would allow us to provide a number of services that we have been unable to provide in the past.

Most specifically, we are very interested in getting our water and wastewater loan program for small rural communities back on track. We haven't had the expertise to do justice to that program, and as you are well aware, the water problems and the sewer problems are very much evidenced in rural communities. They are very severe. We have the funds to enable these communities to assist themselves, and that additional $50,000 would enable us, we feel, to do a much more effective job of administering that loan program for those small communities.

Senator STENNIS. This is an important program. I will tell you personally, if there is someone who doesn't want a home, there is something the matter with him, and if he doesn't take care of the one he has, there is still something the matter with him.

What about the care, do you have anything——

Mr. WILSON. Yes, sir, we find there are two programs we work very much with. One is a self-help housing program where families work together to build their own homes. We find families develop not only the expertise to care for their homes in terms of the construction they put in themselves, but also develop a real pride of ownership as a result of the effort they put into the construction. As a result, they care for their properties and we don't have a big problem.

Senator STENNIS. I am encouraged by your testimony. We want to thank you for coming here and giving us the benefit of your counsel and advice. Sorry we don't have more time, but I am sure you understand our situation.

Mr. WILSON. I certainly do. Thank you, Mr. Chairman, and thank you, again, for your help.

[The statement follows:]

STATEMENT OF HAROLD O. WILSON, EXECUTIVE DIRECTOR, HOUSING ASSISTANCE COUNCIL, INC.

The Housing Assistance Council is grateful for the opportunity to present this statement on behalf of continued funding for HAC's activities to increase the availability of decent housing for rural low-income people.

HAC is a federally funded national nonprofit corporation working to alleviate the housing inequities experienced by the poor living in rural areas. With 26% of the U.S. population in 1980, rural areas and small remote communities have a disproportionate burden of poverty and inadequate housing: 33% of the nation's substandard housing and 38% of the poverty-level households in substandard housing. The changes in the economy since 1980 have, if anything, increased these figures rather than lowered them.

HAC is based in Washington, D.C. with regional offices in Atlanta, Georgia, Albuquerque, New Mexico, and Berkeley, California. We provide technical assistance to state agencies, small town governments, public housing authorities and local housing development organizations to increase local involvement in the development of housing in rural areas. We provide community development loans to small builders through three revolving funds. We gather information on available federal and state policies and resources for delivering housing and water-wastewater services to low-income rural persons, and provide this information in usable form to Congress, state and local governments, and local housing providers.

Recognizing how essential these efforts are to strengthen rural communities and enable them to help themselves, Congress has supported these activities over the years by directing the

Department of Housing and Urban Development (HUD) to provide administrative funds for HAC. In fiscal 1984 this funding amounted to $950,000.

HAC's resources, like those of other nonprofit organizations, have been reduced in recent years even though the need for our services has not diminished -- on the contrary, the need has become more crucial and our assistance more in demand.

In fiscal year 1984, HAC's operating budget is $1.51 million. In order to maintain a level of activity in 1985 comparable to that of 1984, HAC needs $1.58 million, a five percent increase. This means that the funding level from HUD must be at least $1 million, and HAC will try to provide the remaining amount from other sources. During the current year, HAC has supplemented its HUD funding with a reserve of interest earnings from its loan funds, but the reserve is dwindling.

Due to its recent budget reductions, HAC has implemented several painful but necessary cost saving measures, including staff lay-offs, furloughs and deferral of much deserved raises. A funding level of less than $1 million from HUD would mean a serious reduction in direct assistance and loan fund services at a time when local communities and organizations are struggling to make housing programs work, and a curtailment of information services at a time when they are increasingly vital to rural communities trying to adapt to the changes taking place in housing programs.

Specifically, insufficient funding would reduce HAC's already limited training program to nothing even though the staff continues to receive requests for training in the development of housing. As housing providers increase their efforts to combine a variety of housing resources, the technical assistance they request from HAC by necessity addresses more complex situations that require more time, attention, and on-site assistance, but travel resources are already at a bare-bones level.

The loans being made by HAC's loan funds are also becoming more complex and larger, and their servicing already stretches HAC's staff resources.

Several research projects are underway that will require follow-up to use and apply the findings for the benefit of rural low-income people. For example, HAC is working with the Farmers Home Administration to develop a demonstration program that will provide low interest financing for housing designed to save development costs so that it is affordable to low-income families. Development of the concept has been completed but the program design and its implementation remain to be carried out.

HAC is also researching the government's housing inventory in rural areas, with plans to develop recommendations for low-income families' use of inventoried houses. Work has begun to gather prototype plans for migrant housing and to develop a program of rental assistance for low-income families using syndication proceeds.

HAC would like to continue the development of these programs. Funding of $1 million from HUD would enable HAC to continue using the practical rural expertise it has carefully developed over the past twelve years. HAC has proved itself a valuable asset in the development of rural housing and water-wastewater policy and in the development of housing for low-income communities.

The following is a brief description of HAC's activities.

Loan Funds

HAC operates three predevelopment loan funds, the integrity of which has been maintained by careful lending and management practices, although the funds make loans which are considered high risk and for which there are no other available resources. Even in the few instances where states have their own predevelopment loan funds, the demand for HAC loans remains high.

The Rural Housing Loan Fund (RHLF) provides predevelopment credit for low income rural housing projects to prove their feasibility, obtain financing, and begin construction. The largest of the three funds, the RHLF was capitalized at $3,062,000 in 1972. The fund presently has total assets of $3,375,020.

In the twelve years it has been in operation, the RHLF has approved 439 loans to 310 borrowers in 48 states, the Virgin Islands and Puerto Rico. A total of $19,211,289 has been committed for 13,569 housing units. In 1983 alone, HAC committed $2,038,770 to 36 borrowers to assist in the construction of 944 units of single and multifamily housing.

To extend its resources and to answer more of the need, the RHLF has, for the past six years, made "participation loans" to encourage commercial and savings banks and state and local governments to lend for predevelopment purposes. In the last year HAC loans have leveraged close to $1,000,000 in private money which would not otherwise have been available for rural housing predevelopment activities.

HAC front end loans to start the development process typically provide $600 per unit in short term financing. In such a project the permanent mortgage may average $35,000 per unit.

The fund's predevelopment loans thereby leverage permanent financing at a ratio of 50 to one or greater.

In 1983 and 1984 HAC has undertaken a number of loans of increased complexity and difficulty.

Two recent projects involve former military housing. In Smyrna, Tennessee, HAC provided a predevelopment commitment for 211 units owned by county government and proposed for conversion to a housing cooperative by a tenant group. In Madera, California, HAC assisted two local organizations to acquire from GSA 27 single family units which will be rehabilitated through the self help method utilizing FmHA loans.

HAC has in process two projects involving conversion of hotels into standard apartment developments. The project in Port Arthur, New York is approved for 25 units to be financed with an FmHA rental housing loan and the one in Hamilton City, California, proposes 35 units of farm labor housing in a converted hotel.

In ventures such as these, the HAC loan funds have provided otherwise unavailable assistance to local housing sponsors which enabled them to bring difficult housing to feasibility, to acquire permanent financing and other assistance, and to finish completed units for low-income families.

The Rural Water and Wastewater Loan Fund provides predevelopment loans for rural water and wastewater projects. This $300,000 loan fund, operated since January 1980, has made 60 loans to towns, counties, water districts and associations in 23 states. The fund has committed $480,391 for projects which will produce 217,982 water and sewer connections. The fund has responded to the need for adequate water and wastewater systems in small, poor, often minority communities ranging in size from a few families to 10,000 population. The problems addressed are often imminent health threats, including water supplies contaminated by chemical and human waste or the complete absence of even minimally adequate systems.

The Rural Development Loan Fund (RDLF) is an economic development loan fund of one million dollars which assists small and minority local contractors, especially in remote areas where credit and assistance are unavailable. In its three years of operation, RDLF has committed 31 loans totalling $2,193,856 to 26 borrowers in 14 states. The proposed projects represent more than 700 housing units. In 1983, $991,835 was committed to 10 borrowers in seven states to develop 130 units of single and multi-family housing.

Bank participation loans have been an effective method of providing RDLF borrowers with sufficient development funds. For example, there are currently two loans approved utilizing this method. One, a loan of $229,592 in Alabama with a $100,000 HAC guarantee, will leverage a dollar for dollar bank loan for construction financing. The other loan of $100,000 has no HAC guarantee and, therefore, no risk to HAC loan funds, and will provide the borrower with a $100,000 line of credit from the bank to develop an average of 6-10 single family housing units a year in Missouri.

A new use of the RDLF is a loan of $50,000 in Massachusetts to create a rental assistance fund to serve lower income tenants. The loan will be repaid from syndication proceeds.

HAC loans are accompanied by technical assistance, information, and training, as appropriate, to support borrowers and enable them to carry their projects to fruition. Because of this combination of loans and assistance, dozens of housing projects have been developed which would otherwise fail or not even start.

Assistance and Information Dissemination

In addition to its loan fund activities, HAC increases the rural housing expertise of public and nonprofit agencies through specialized technical services. Several types of technical services are provided; among them are assistance in:

- analysis of project feasibility, financing plans, subsidy availability, and preliminary cost determinations
- land acquisition and development, including zoning, environmental, and water and sewer regulations
- reviews and analyses of architectural, engineering, and legal requirements involved in property acquisition and housing construction and repair.

HAC plays a crucial role in bridging the information gap between government and small communities. The bi-weekly HAC NEWS reaches almost 3,500 subscribers in rural areas, and for many readers is often the sole source of housing and community development information, legislative and administrative rulings, housing program changes and state housing program information. In 1983, HAC published eighteen issues of the HAC NEWS.

In addition, HAC responded to about 250 requests for technical handbooks, program guides, and other housing and community development manuals in 1983. These publications, all written by HAC in simple, non-bureaucratic language, are of inestimable value to small town developers, housing authorities, government officials and developing organizations. HAC also responds to requests from the Congress, HUD, Farmers Home and other federal agency officials for up-to-date and reliable rural housing and community development statistics and housing policy development information.

HAC provided in FY'83 an average of over 500 hours of technical assistance per month.

Some examples of technical assistance delivered by HAC in 1983 include:

- Assistance to the Mohawk Housing Corp. of Hogansburg, N.Y. with a 515 application; the application is complicated due to the trust status of Indian land and the security requirements of FmHA; the application has been approved and will receive rental assistance from the state of New York.
- Development for the Ixtlan Housing Development Corp. of Carlsbad, New Mexico plan for 36 units to be developed under the self help housing program, and assisted with the locations of sites and negotiations with FmHA; plans and application have been approved.
- Continuation of work with the Bear River Association of Governments of Brigham City, Utah, the Bureau of Indian Affairs, the state of Utah and others to convert unused BIA school apartments for use by homeless migrants.
- Assistance to the Valley Housing Development Corporation and Rural Housing Improvement with an application for the construction of 18 units of housing for farm labor in Holyoke, Massachusetts. The application is under review by FmHA.
- Continued assistance to the Tallulah Housing Authority, Tallulah, Louisiana in the final phase of a 58 unit rural rental development. Forty units were completed and rented up last year, and the application for the final 18 units has been prepared by HAC and is being reviewed by FmHA.

HAC currently offers more than 20 guides to federal housing and community facilities programs. In 1983, three program guides were significantly updated to reflect changes in regulations, and two new guides were written. The homeownership loan program manual (Section 502), the home repair loan and grant manual (Section 504), and the rural rental housing loan manual (Section 515) were revised. A manual on the farm labor housing program (Sections 514/516) and one on land development to assist local groups with the process and techniques of developing sites for housing were written.

HAC has responded on numerous occasions to HUD requests for information and recommendations on rural issues. In addition, HAC worked with HUD to provide data and analysis to the President's Commission on Housing on several occasions during the life of the Commission.

Currently, HAC is conducting several research studies for HUD. HAC is examining questions of rural housing affordability in a number of states, and collecting and analyzing data to determine the barriers to affordable housing, particularly those that may be unique to remote rural areas. Regional seminars on affordable housing were held in August, 1982, and August, 1983. Seminar reports have been published, as has a study on "The Existing Resources and Affordable Housing Issues in Rural Areas." Another report, "Adaptive Reuse of Existing Structures for Rural Housing Purposes," has been published, dealing with the existence or absence of abandoned structures in rural areas which might be converted to housing purposes.

HAC is also analyzing 1980 Census data to determine the condition of the nation's rural housing. A report is being prepared that should provide valuable information to those developing policy directions.

All of these studies and HAC's work with local groups and governments, Indians, farmworkers and other special groups provide HUD with data from the field which will enhance HUD's policy-making responsibilities toward rural areas and small towns.

HAC's publication list and a list of reports submitted to HUD are attached.

Skills Transfer

Over its history, HAC has held hundreds of training conferences, seminars and workshops, all aimed at improving the housing development skills of rural and small town governments and practitioners. Every region of the country has received this service, and more than 8,000 individuals and organizations have benefitted. Combined with direct technical assistance onsite and through consultation, HAC responds to an average of 350 requests per year for help in packaging HUD Section 202 elderly or FmHA rural rental or homeownership programs for lower income people.

In 1983, HAC continued its program of training sessions. Staff conducted a number of training sessions for rural nonprofit corporations in the field on the relatively new state rental assistance programs. Staff provided training sessions on housing rehabilitation in Atlanta and Albuquerque for several private and public groups from states in the Southeast and Southwest, respectively. HAC also sponsored a regional conference for Southeastern state agencies in Atlanta in September, "Housing Development and Land Retention in the Rural South," and cosponsored with the California Department of Housing and Community Development a seminar, "Affordable Housing Alternatives in Rural Areas," in Mokelumne Hill, California.

Conclusion

Years of assisted housing programs have certainly had an impact upon the condition of housing in rural communities. However, Census data and the visual evidence available to anyone travelling through rural America indicate that the housing stock for low-income residents of rural areas still needs a great deal of improvement. For twelve years, the Housing Assistance Council has been working towards that goal. Congress has continued to support HAC's work by providing funds to HUD for HAC's use, and Congress has relied on HAC's work for information about local or national rural housing needs, and for direct assistance to local housing providers.

Funding of $1 million in fiscal 1985 is requested for HAC to continue to provide the services and information for which it is relied upon.

HAC Reports Provided to HUD, 1983

HAC TECHNICAL SERIES:

1. FmHA Section 502 Rural Homeownership Loans (revised)
2. FmHA Section 504 Rural Home Repair Loans and Grants (revised)
3. FmHA Section 515 Rural Rental Housing Loan Program (revised)
4. A Guide to Rural Land Acquisition and Development
5. FmHA Section 514/516 Farm Labor Housing Loans and Grants
6. State Initiatives in Housing Finance and Rural Delivery
7. Census Data Analysis
8. State Action Memorandum: five issues
9. Model State program
10. Study on Black Land Loss
11. Report on Conference on Housing and Land Retention in the Southern States
12. Report on Affordable Housing Alternatives in Rural Areas
13. Summary and Findings from the Seminar on Affordable Housing in Rural Areas
14. Report on Innovative Building Systems
15. Report on Rural Emergency Shelter Need

16. An Affordability Comparison of Mortgage Instruments

17. HAC Rural Assessments

Assessement 1

HUD's Affordable Housing Demonstration - A Rural Assessment

Assessment 2

Followup on North Carolina Rural Assistance Initiative

Assessment 3

A Rural Affordable Housing Demonstration Rationale and Program Design

SERVICES UNDER HUD CONTRACT

		1981	1982	1983	Projected 1984
RURAL HOUSING LOAN FUND	Loan Originations:				
	No. of Loans	42	31	36	30
	Amount of Loans	$1,390,464	$797,992	$2,038,770	$2,000,000
	No. of Units	806	614	944	800
	Average Loan	$33,106	$25,742	$56,633	$66,667
	Servicing				
	No. Active Loans	147	162	212	200
	Person Years	4.5	4.5	3.5	2.5
RURAL DEVELOPMENT LOAN FUND	Loan Originations:				
	No. of Loans	8	12	10	12
	Amount of Loans	$609,287	$934,306	$331,835	$300,000
	No. of Units	331	250	130	125
	Average Loan	$79,535	$77,859	$99,184	$25,000
	Servicing:				
	No. Active Loans	8	18	19	15
	Person Years	1	1	1	1
WATER/ WASTEWATER LOAN FUND	Loan Originations:				
	No. of Loans	32	6	3	15
	Amount of Loans	$213,053	$37,950	$21,000	$90,000
	No. of Connections	8,349	1,213	450	2,000
	Average Loan	$6,658	$6,325	$7,000	$6,000
	Servicing:				
	No. Active Loans	44	40	30	26
	Person Years	1.5	.5	.5	.5
TECHNICAL ASSISTANCE	Major ongoing projects	----	34	34	32
	Training sessions	----	21**	7	3
	Person hours per year	5,840*	3,635	5,206	8,000
INFORMATION	HAC NEWS	17	20	18	20
	State Action Memo	-	-	5	6
	Technical Manuals	6	4	5	3
RESEARCH	Reports	13	13	13	8
	Person Hours	8,620*	7,208	7,672	3,012

*Estimate
**Eleven were non-HUD funded

May 1984

EXECUTIVE SUMMARY—FINAL REPORT OF PROGRAM ACTIVITIES

HUD CONTRACT #H-5596

The work that provided the basis for this publication was supported by funding under Contract #H-5596 with the U.S. Department of Housing and Urban Development. The substance and findings of that work are dedicated to the public. The author and publisher are solely responsible for the accuracy of the statements and interpretations contained in this publication and such interpretations do not necessarily reflect the views of the government.

The Housing Assistance Council (HAC) is a twelve-year-old nonprofit corporation which supports the development of rural low- and moderate-income housing nationwide. HAC provides technical housing services, seed money loans from a revolving loan fund, housing program and policy assistance, research and demonstration projects, and training and information services.

BACKGROUND

Under its 1983 contract with the Office of Policy Development and Research (PD&R) at the Department of Housing and Urban Development (HUD), the Housing Assistance Council (HAC) undertook an in-depth exploration of current resources for low-income housing in rural areas, with a view to assessing and maximizing their potential for compensating for federal cutbacks in housing programs. Among the resources and tools selected for investigation were state programs, techniques for increasing the affordability of shelter through low-cost designs and innovative financing, and the ability of existing delivery agents, primarily nonprofits, to forge relationships for sustaining rural housing delivery.

HAC's research was carried out through reviewing the pertinent data and literature, conducting site visits and seminars, and conducting technical assistance. For example, the loan fund and technical assistance activities were informed and shaped to some degree by our findings and activities related to our assessments and research. The chapters which follow are organized by the six tasks under HUD contract #H-5596.

(In this report, unless noted otherwise, the term "low-income" implies household incomes below 80% of area median incomes, which is the traditional definition used in HUD rental assistance programs.)

CHAPTER I

Support for Operating and Servicing the Revolving Loan Funds

Task I

HAC operates three loan funds seeking to respond to the housing needs of lower income families in rural towns and the countryside by providing funds for predevelopment, site acquisition, construction financing, working capital, bonding and other costs of housing, community development and water-sewer projects. The funds total $4.3 million: the Rural Housing Loan Fund (RHLF) at $3 million, the Rural Development Loan Fund (RDLF) at $1 million, and the Water and Wastewater Loan Fund (W/WWLF) at $300,000.

In 1983, the demand for the funds continues to be strong, although the shifts in federal funding available for housing have had a significant impact on the type of requests received. Less federal money is available for multi-family housing (mainly Section 8 new construction and public housing) and for administration of housing programs by nonprofit organizations and public bodies. As a result, HAC has received a greater variety of loan requests, often for more money and with a patchwork of development and financing sources to make up for the reductions in federal subsidy. There are also more requests from groups which are attempting to support their administrative operations partially by earnings from housing or other activities and, where they exist, there is more reliance on state and local government housing assistance.

Most of HAC's 43 new loans this year were those which have become traditional with HAC, namely predevelopment loans to rural low-income housing sponsors who have no other source of start-up financing. These loans are for short term uses which end with development, construction and permanent financing of housing by an established program. The most common uses of these funds include options, down payments, land purchase, surveys, preliminary architectural and engineering work, historical and archaeological surveys, front-end interest payments, zoning, mapping, platting, legal fees and government fees.

The 35 new RHLF loans in 1983, totalling $1,997,710, will provide a combination of 581 units of new construction and 287 units of rehabilitated housing. The eight loans approved under the HDLF totalled $726,204 and will provide approximately 126 units of single and multi-family housing. The majority of the loan commitments were for projects involving permanent financing through either FmHA or HUD, though two projects will be permanently financed through a combination of loans and grants, and one borrower has received a five-year long-term financing arrangement from HAC.

As in the past, HAC's experience this year established that even where a state government is operating a seed money loan fund, the demand for HAC funds continues to be high, frequenty because the state funds are regulated so tightly to avoid loss that other predevelopment financing is needed to make the project feasible. Feasibility is also enhanced in a number of cases by using HAC loan funds to leverage other lending, for instance by supplementing and sometimes guaranteeing a commercial lender against loss, enticing that lender to make a loan which it otherwise would not make, or leveraging other federal money such as block grants for permanent financing.

Rehabilitation activities in 1983 were among the most ambitious ever undertaken by HAC. HAC participated with Self-Help Enterprises of California in the acquisition of a former military base subdivision from the federal government and committed to work with Wherry Housing Cooperative near Nashville, Tennessee in acquiring and converting to a cooperative 211 units of housing scheduled for destruction by the county government.

HAC continued to support construction of demonstration houses when changes in standards and technology show promise of bettering housing opportunities for rural people. This year FmHA expressed greater willingness than before to finance housing of reduced size and built with modified standards.

HAC has provided advice, technical assistance and loan funds to several syndication ventures, the popularity of which is a response to the increased need for non-federal funds. Syndication proceeds may be used to provide administrative support to a nonprofit or public group which develops and operates low-income housing, or to reduce rents and otherwise assist low-income tenants to obtain decent housing. HAC's Board of Directors continues to consider the organization's policy on investment of HAC loan funds in syndications. To protect HAC's tax-exempt status from any question which, though only remotely possible, might arise from participation in syndications which are inherently profit-motivated, the organization created a subsidiary corporation, Rural Housing Services (RHS). In 1983 RHS carried out its first three syndication deals and conducted an extensive search for additional capital for this activity.

The HAC Loan Committee and Board reluctantly adopted an interim policy to allow equity loans under stringent conditions, to fill an increasing need. For example, the HUD Section 202 elderly and handicapped housing program now requires a 0.5% (to a maximum of $10,000) contribution by the nonprofit sponsor in the proejct. This amount is neither mortgagable nor recoverable from rents. Since HUD 202 is still entitled to 100% Section 8 subsidies, making the program a good source of low-income housing, and since many rural 202 sponsors have very limited capital, HAC is impelled to support these projects. The lending initiatives of housing finance agencies, state and local governments and others promise an even greater need for such support.

The W/WWLF remained largely inactive in 1983. HAC lacked a Water and Wastewater Loan Specialist to work primarily on these loans, which demand more detailed work and follow-up than large housing loans. Because the Department of Health and Human Service's Office of Community Services (HHS/OCS) chose not to fund the administration of the W/WWLF, in mid-1983 HAC applied to HHS/OCS for a change in the structure of the existing lending procedures which would give HAC sole responsibility for administration of the fund. HHS/OCS has not yet responded to this request. Without this approval, HAC is restricted to making W/WWLF loans for projects which respond to emergency situations. While the request has been under consideration by HHS/OCS, HAC made loan approvals only under the Executive Director's discretionary loan authority. Three such loans were approved, totalling $26,000 and representing 392 connections. HAC's Loan Committee also cancelled those loans for which commitments had been held open for more than one year, thereby making approximately $108,000 available for new loan commitments as soon as approval is received from HHS/OCS.

Finally, HAC has gradually increased the amount of property it holds in inventory and has spent increased time in servicing old loans and inventory property.

Chapter II

Technical Reports, Publications and Information Services

Task II

A special effort is needed to provide usable information on housing and community development resources to small towns and remote communities. Residents of small towns are often isolated form information about the government and its housing and community development programs. Small, rural, or minority-led communities are often further split from the mainstream by poverty and years of discrimination which dominated schools, jobs and residential choices. HAC sifts and interprets existing information to help these communities understand how government programs work, and how they can acquire private and public resources for housing and community development projects and programs.

HAC also serves as an information source for HUD, other federal agencies, state governments, local officials and others concerned with rural housing and community development programs. Acting in a clearinghouse capacity, HAC, through its various tasks, looks for ways to deliver needed information on implementation of federal and state housing programs and approaches. This publication and information function is key to the operation of HAC's other activities, most particularly in the area of state and local technical assistance.

During the 1983 contract period, HAC staff revised HAC's TECHNICAL SERIES handbooks on the FmHA Section 502, 504 and 515 programs and developed new TECHNICAL SERIES manuals on rural land acquisition and development and the FmHA 514/516 program. Conference reports and research results produced under other tasks were also published.

HAC has found a great interest in and a market for all of its publications. Information which has generated particular interest is HAC's compilation of rural housing and poverty data from the 1980 Census which will not be available in this form from the Bureau of the Census. HAC has aggregated the data to be easily accessible and to provide for easy comparison of need among states and regions. The analysis indicates four trends clearly important to those on all levels of government, nonprofits and the private sector with any interest in rural housing:

1. a 42% decline since 1970 of the number of rural substandard housing units; however, rural areas still have a disproportionate (52%) share of the units lacking plumbing;

2. an 83% increase in the number of rural mobile homes (in number the increase amounts to about two-thirds of the decline in substandard units);

3. an increase by half in the number of nonmetro households in poverty; and

4. approximately 850,000 rural households in poverty and substandard housing. Such households are predominantly minority, Appalachian, or on farms.

Even before publication and formal announcement of the Census information, HAC has received over 20 requests for the data.

Interest in HAC's publications has increased along with the need for alternatives to traditional federal funding. In many rural areas, FmHA-financed housing is the only housing being produced, or private, state or federal resources are used along with FmHA financing to produce housing that would not be available without this combination of resources. HAC's technical manuals provide concise, "how to" sources of technical assistance. As federal aid for housing decreases and state governments and others move to fill the housing role, reports on HAC's conferences, the "State Action Memorandum" and the Census data become more important.

Chapter III

Support for Community Development and Housing Delivery Organizations

Task III

Individuals, sub-state groups, local governments and other organizations that deliver housing to the poor in rural areas continue to struggle with limited resources. By providing local groups with technical know-how, HAC assists them in reaching their housing goals. The constant field contact also enables HAC to keep up to date on the efficacy of its assistance and the housing delivery mechanisms and programs. Through this communication with the field, HAC is able to provide technical assistance to local, state and federal governments and policymakers on effects of programs on the serious rural housing problems.

In fiscal 1983, HAC provided an average of over 500 hours of technical assistance per month, in support of sub-state organizations, local governments and related organizations that deliver housing, community development and economic development services. The delivery of HAC's technical assistance is provided both systematically and in response to requests. On the average, HAC receives over 100 requests per month for technical assistance and up to 200 requests for technical handbooks, guides and other housing and community development materials. HAC also responds to requests from the Congress, HUD, FmHA and other federal agencies for up-to-date rural housing and community development statistics and housing policy information.

During the last several months of 1983, HAC has responded to numerous requests for assistance from organizations, builders and others concerned about the slow processing of their FmHA rural housing applications. Frequently, this slow processing was caused by FmHA's policy giving priority to agriculture program applications and the servicing of existing loans. Though HAC has contacted certain county, district and state FmHA offices, and met with staff in the FmHA national office, this is agency policy at the highest levels.

HAC has been able in some cases to expedite FmHA's handling of individual applications delayed for a variety of reasons.

A substantial part of HAC's technical assistance is delivered by its three regional offices located in Atlanta, Georgia; Albuquerque, New Mexico; and San Francisco, California. Their presence makes HAC accessible to other organizations in the field. Since the HAC regional office staff are very knowledgeable about their respective parts of the country, they can provide meaningful assistance that addresses the needs of specific areas.

In 1983, the regional and national offices held several workshops, conferences and training sessions, as well as responding to requests for assistance. Additionally, in coordination with the "Technical Reports and Publications" task, HAC provides written technical information.

HAC's assistance over twelve years has had a multiplier effect. Many trainees and recipients of HAC's technical assistance have gone on to provide housing assistance on their own and to become more independent in their efforts.

Chapter IV

Support for State Rural Delivery System Development

Task IV

In 1983, HAC continued its study of state initiatives related to the development and delivery of resources for low-income housing in rural areas; enabled state agencies and organizations to share their ideas for promoting rural housing at a regional conference on "Housing Development and Land Retention in the Rural South" and through a bimonthly newsletter (the "State Action Memorandum"); and developed technical assistance materials. The latter include a composite model for state finance and delivery of low-income housing, suggested state legislation to promote homestead retention by heir property owners and rural farmers, and 1980 Census data on housing conditions in the states.

According to the U.S. Treasury, states lost nearly $6.6 billion in federal aid in 1982; the decline in federal aid continued in 1983. In general, states responded to the cutbacks first by tightening their own budgets, and then by raising state taxes. However, no states are fully compensating for federal cutbacks in low-income housing programs.

Currently, state resources for rural low-income housing production include small cities community development block grants (CDBG), tax-exempt bonds, appropriations by a few states intended to supplement federal resources, and direct federal subsidies for rental housing (FmHA and HUD programs) which offer states opportunities for piggybacking or adding their own resources to increase their effective program coverage. States are exploring alternative housing development approaches including use of public pension funds for investment in mortgages; deregulation of those codes and zoning ordinances which drive up housing costs; encouragement of mobile home use; a shift in program resources from new construction to adaptive reuse of existing structures (such as abandoned schools); rent-skewing to support low-income units in mixed-income projects, and the systematic use of project syndication proceeds to bring down rents.

State actions (both state and federally funded) to promote development of rural low-income housing in 1983 included:
- state rental assistance programs in New York, Massachusetts and California;
- state administration (in all but four states) of the small cities CDBG program, formerly administered by HUD;
- funding by the states of Kentucky, Minnesota and Virginia of production of "warm and dry" low cost minimal shelter units;
- participation by 14 states in HUD's rental rehabilitation demonstration program, using Section 8 certificates with small cities CDBG funds for renovation of rental properties;
- combining the CDBG program with state tax-exempt home improvement bonds;
- participation in tri-party agreements with the Federal National Mortgage Association and lenders to finance the purchase and rehabilitation of housing;
- development by West Virginia of a system for coordinating multi-family bond issues with FmHA Section 515 developments;
- promotion of FmHA single-family developments by providing interim financing, construction financing and costs of land acquisition and development;

- authorization of state housing commissions to coordinate housing programs within a state;
- adoption of statewide building codes, energy standards and/or regulation of local zoning codes;
- adoption of moratoria on foreclosures;
- adoption of legislation to prevent loss of heir property due to partition sales; and
- set-aside of state pension funds for mortgage financing.

In summary, HAC finds that 1983 has not brought dramatic changes or even an increase in state activity in rural housing, but a continuation of patterns noted in 1982, including a decline in the use of block grant funds for housing activities, a concentration of the most innovative HFA efforts in urban and suburban areas where the risks of loss may be minimized, and significant rural activity predominantly in states which previously established a policy and programs for rural areas. Some states have effectively built on existing resources, in ways often involving considerable time and effort, and occasionally involving state subsidy. It remains to be seen if the singular state initiatives of 1983, such as those in rural rental assistance and use of block grant funds for new "warm and dry" units, will be adopted by states on a significant scale in the coming years.

Chapter V

Affordable Housing Alternatives for Rural Low-Income Persons

Task V

In the past few years, "affordable housing" has been a major concern for almost all Americans. The dream of homeownership is fading except for the wealthiest of families. In September of 1983, the nationwide median new house price was $80,800. The median existing home price was $69,900. The income needed to purchase the median existing home[1] is $29,378. The median family income in the U.S., however, is only $24,384. For the low-income, there is little hope of obtaining homeownership.[2]

HAC has continued to investigate ways to provide affordable housing in rural areas for low-income persons. HAC examined small, no-frills, energy-efficient, low cost houses; assisted in development of a demonstration seasonal housing project under the FmHA Farm Labor Housing short term occupancy standards program; studied homelessness in rural areas; and compared mortgage financing mechanisms.

At a HAC-sponsored seminar on "Affordable Housing Alternatives in Rural Areas," participants toured three small no-frills houses in California, designed to meet state building codes and thus close to meeting HUD's Minimum Property Standards (MPS) but not large enough to meet FmHA's MPS. Despite the reduction in building costs achieved by reducing the size and amenities of the homes, the price of the financing largely determines the income level that can be served. The annual incomes of the families in the California houses ranged from $14,000 to $17,000.

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[1] Assuming a 20% down payment and 30 year mortgage at 12.85 percent.

[2] Sources: National Association of Realtors, National Association of Home Builders, and the U.S. Bureau of the Census.

Financing seems to be the universal problem in providing housing for the rural poor. In Kentucky many ways, albeit small, have been used to knock dollars off housing costs, and the Kentucky Housing Corporation has worked with local non-profit builders to devise ways to help. For example, the state has provided a line of credit for use at three percent interest for construction financing. Other states are beginning to develop various ways of helping developers of low-income housing or the low-income families directly.

FmHA financing of minimal shelter housing would help meet the needs of lower income families. FmHA has expressed an interest in a demonstration of Section 502 financing for "warm and dry" homes. HAC has agreed to develop a concept paper for the demonstration and to continue to work on it into the next program year.

The FmHA Farm Labor Housing short term occupancy standards demonstration is intended to provide lower cost farmworker housing than units developed for year-round use, and to develop a prototype housing design for seasonal housing. HAC has continued to monitor and provide technical assistance to the local organization in North Carolina developing a project under these standards, although construction has not yet begun.

HAC's study of rural homelessness and the need for rural shelter recommends a national rural emergency relief program assisting the rural unemployed to stay in their homes through financial assistance and counseling, and development of a network of emergency shelters for special populations, including migrant farmworkers, other migrant jobseekers, the elderly, abused persons and pregnant teenagers.

Since financing is critical to housing affordability, HAC studied various financing mechanisms and evaluated six basic types of mortgage in terms of meeting the needs for low-income homeownership. The FmHA Section 502 interest credit is the common element in each of the subsidies examined, either as the resource which could be built upon in order to serve lower income households than it currently does, or as an option within the subsidy program. The other subsidy types are the "Norwegian Plan," deferred mortgages, "shared equity" deferred mortgages, and the "Home Ownership Assistance Program." HAC's analysis recommends combining the interest credit and subsidized deferred mortgage programs, using the present Section 502 interest credit program for those whose incomes and housing costs permit. Those unable to participate fully in the interest credit program would pay on the maximum affordable interest credit mortgage, with the balance deferred at the FmHA market rate of interest.

Overall, HAC's work on affordability indicates decent housing can be made available to even the lowest income rural residents. Development of ways to combine financing mechanisms and funding sources is crucial, as is continued availability of subsidies for housing the needy.

Chapter VI

Miscellaneous Rural Assessments

Task VI

HAC prepared assessments of three topics, each aimed at providing HUD with background and substantiation for designing and undertaking a Rural Affordable Housing Demonstration. The overall conclusions are that a specifically rural demonstration is needed and that such a demonstration should be targetted to low income and remote rural communities.

The three reports were:

1. an assessment of the applicability of the Joint Venture for Affordable Housing to rural areas, and the extent to which it might be desirable to conduct a separate rural demonstration;
2. an assessment of selected follow-up activity of HUD's Rural Assistance Initiative in North Carolina to determine if any of that demonstration's activities have relevance to affordable housing concerns today, and whether one or more of the North Carolina programs should be replicated and/or included in a new rural demonstration;
3. a series of recommendations regarding a Rural Affordable Housing Demonstration which would constitute the bulk of PD&R's rural research agenda for FY84 and beyond.

Assessment 1

The first assessment found there was no specifically rural element to either the design or the implementation of the Joint Venture for Affordable Housing (JVAH). Further, there was no low-income component to the demonstration. Because of the unique nature of rural housing problems and of the rural communities in need of assistance, this gap in the JVAH, combined with its focus on issues of affordability that are less relevant to rural than to urban and suburban areas, suggests that a separate rural affordable housing demonstration be mounted by HUD.

Issues of deregulation, for example, are of minimal concern in rural areas. Increasing densities is not likely to be a serious contender for implementation as a cost-saving measure in the rural areas; on the other hand, reduction in room size, amenities, and other cost-saving design and construction techniques may be as useful to rural builders as to their suburban counterparts.

The constraints on affordability for low-income rural communities are the cost and availability of financing, the presence or absence of a delivery system to produce housing that is thermally efficient, economical to operate and maintain, and safe and durable to live in.

Given the fact that the JVAH did not address these issues, HAC recommends that HUD design and implement a Rural Affordable Housing Demonstration which focuses on several markets and income levels, at least one of which would be low income -- that is, below 80% of median income.

Assessment 2

To examine the significance of the RAI for a rural affordable housing demonstration and its ability to address unmet rural housing needs, HAC chose to focus on the North Carolina demonstrations whose beneficiaries were the lowest income households: the Aurora CDBG relocation and the Migrant Multi-Purpose Service Center.

The Aurora project used CDBG monies for relocation and new construction. A number of owner-occupied houses of elderly residents were about to be condemned, which would trigger the availability of funds for relocation. New, modest energy efficient standard houses were erected on the same property as the substandard houses, and the residents were able to move from one to the other with a minimum of displacement and inconvenience. The substandard houses were then razed and the property cleared.

The new houses used a combination of modular and stick built techniques, were easy to maintain at low cost and there were no monthly mortgage payments or other carrying charges. They were produced at an average cost of $15,000. Several years later, the houses are in excellent condition, well kept, and have contributed to the upgrading of the surrounding community. Other rehabilitation and new construction efforts have followed in the immediate area, as well as extensions of water and sewer facilities.

Since this project was completed, HUD has transferred the administration of the small cities CDBG program to the states. However, this does not alter the fact that small cities CDBG funds can be used in this manner.

Because of the apparent success of this project and its ability to serve very low-income people, particularly the elderly who often own their own land in rural areas despite very low incomes, HAC recommended that a case study be developed, a cost analysis be brought up to date in one or more representative areas of the country and discussions undertaken with several states to ascertain their interest in pursuing this approach. The state of North Carolina has indicated an interest in HAC developing a technical assistance bulletin that could be distributed throughout the state, as well as HAC's participation in a technical assistance workshop for small cities applicants. Similar activities can be pursued in other states.

To the extent that HAC has resources available in the next year, it will pursue these activities. In the meantime, HAC recommends that HUD make information on this program available through CPD to the states.

Migrant Multi-Purpose Center

The Migrant Multi-Purpose Center was a concept and set of architectural drawings that was developed under the RAI. The plan was to provide CDBG funds to an applicant county which would sponsor the development and operation of a facility to house migrant farmworkers in season. During the months when no migrants needed housing, the facility would be used for community, educational, training and other purposes.

This was a truly innovative scheme which failed to reach fruition due to bureaucratic and other impediments. Local organizational support in North Carolina still exists for the project, and the need for this kind of facility exists nationwide in the heavily travelled migrant states. HAC recommends that a feasibility study be conducted to determine interest and financial support available for reactivation of the project; development of plans for reactivation if appropriate; dissemination of model plans to other organizations and state agencies; and meetings with FmHA to determine the agency's interest in such a project, particularly as part of a test of its new seasonal standards regulations.

Assessment 3

The Rural Affordable Housing Demonstration (RAHD) recommended under Assessment 1 is designed to reach three income groups, and would mobilize the participation of a number of trade, industry, financial, non-profit and development organizations. These would include, for example, the National Forest Products Association which cooperated with HUD's Rural Assistance Initiative demonstration in North Carolina, as well as the National Association of Home Builders, the Concrete Masonry Association and others. State Housing Finance Agencies would be active participants, and for the lower income segment of the demonstration, non-profit developers and community based organizations would be involved.

"Affordable" would be defined to include the component elements of housing cost for each income level, and construction and design techniques would be tested to determine the extent to which innovative practices, reduced room size and a change in amenities would contribute to lowering costs. At the same time, standards would be required that maintain thermal efficiency, housing durability and safety and efficiency in maintenance and operating costs.

An emphasis on affordability for low (under 80% of median) income households is particularly necessary at this time to address the serious housing needs of increasing numbers of families who are outside the boundaries of the groups which have suffered historically from housing deficiencies. Targetting one part of this demonstration to communities and regions of the country with a high incidence of substandard housing and poverty should contribute to HUD's ability to devise ways of addressing the unique needs of these areas and populations.

HAC concludes its recommendations in this Assessment by noting that the proposed demonstration can provide an unusual opportunity for groups and agencies within the housing world who do not ordinarily collaborate to work cooperatively, learn from one another, and by so doing, increase the possibility of finding solutions to the increasingly intractable problems of financing, developing and operating housing that can be afforded by moderate and low-income families.

1983 LOAN FUND ACTIVITY REPORT
RURAL HOUSING LOAN FUND

APPENDIX A-1

	NAME AND LOCATION	TYPE OF AGENCY	AMOUNT OF LOAN	DATE APPROVED	SUBSIDY PROGRAM	TYPE OF PROJECT	NUMBER OF UNITS
1.	Coordinating Council for Independent Living, Inc., (NV)	Nonprofit	$ 63,000	1/21/83	Section 8 Mod. Rehabilitation	Homes for Mentally Retarded	12
2.	Homes In Partnership, Inc., (FL)	Nonprofit	$ 51,020	1/21/83	FmHA TA Grant	Self-Help Subdiv. Rehab.	12
3.	Chuk Chanse Village - Madera, CA Self-Help Enterprises, (CA)	Nonprofit	$200,000	4/15/83	FmHA 523	Self-Help Rehabilitation	27
4.	PPEP Housing Development Corporation (AZ)	Nonprofit	$133,363	4/15/83	FmHA 502	Self-Help Subdivision	33
5.	Colorado Rural Housing Development Corporation (CO)	Nonprofit	$ 25,000	4/15/83	FmHA	Rehabilitation	49
6.	Alexandria Bay Housing Authority (NY)	Public Housing	$ 23,000	4/15/83	FmHA 515	New Construction Rental Assistance	30
7.	Arkansas Delta Housing Development Corporation	Nonprofit	$ 60,000	4/15/83	FmHA 523	New Construction Self-Help	12
8.	Wilson County Improvement Association (NC)	Nonprofit	$ 10,900	4/15/83	FmHA	Farm labor housing	
9.	Wherry Housing Action Committee (TN)	Nonprofit	$ 50,000	4/15/83		Conversion of Military Housing	211
10.	National Council of La Raza (AZ)	Nonprofit	$ 2,965	4/15/83	FmHA 501 (c)(3)	New Construction	30
11.	Richgrove Community Services District	Public	$ 10,000	4/15/83	FmHA	Farm Labor Housing	30
12.	Homes In Partnership, Inc., (FL)	Nonprofit	$ 51,020	6/07/83	FmHA 502	Single Family SH	20
13.	Rural Family Housing, (VT)	Nonprofit	$ 6,000	7/15/83	HUD 202, Section 8	Elderly Housing New Construction	15
14.	Gray Panthers (CA)	Nonprofit	$ 74,500	7/15/83	FmHA 515	Elderly Housing New Construction	40
15.	Colorado Rural HDC (CO)	Nonprofit	$ 75,000	7/15/83	Rental	Farm Labor Hsg. Rehabilitation	(49) *
16.	NAACP, Mississippi County, Arkansas	Nonprofit	$ 3,363	7/15/83	HUD 202	Elderly Housing New Construction	40
17.	Rural Housing Improvement, (MASS)	Nonprofit	$ 20,000	7/15/83	Conventional	Warm and Dry Demonstrational	1
18.	SHE (Chuk Chanse) Madera, (CA)	Nonprofit	$408,000	9/23/83	FmHA 502	Property Rehabilitation	(27) *
19.	Regional VI Housing Authority (NM)	Nonprofit	$ 38,829	9/23/83	FmHA 514/516	Farm labor New Construction	20
20.	HOUSE, Inc., (MD)	Nonprofit	$ 76,735	9/23/83	FmHA 502	Self-Help New Construction	6

1983 LOAN FUND ACTIVITY REPORT
RURAL Housing LOAN FUND

APPENDIX A-1A

	NAME AND LOCATION	TYPE OF AGENCY	AMOUNT OF LOAN	DATE APPROVED	SUBSIDY PROGRAM	TYPE OF PROJECT	NUMBER OF UNITS
21.	PPEP Housing Development Corp., (AZ)	Nonprofit	$144,200	9/23/83	FmHA 502	New Construction	18
22.	Canal Town Development Corp., (NY)	Nonprofit	$ 3,750	9/23/83	FmHA 515	New Construction	5
23.	Delta HDC (MS)	Nonprofit	$ 50,500	11/4/83	FmHA Section 502	Single Family New Construction	35
24.	Rocky Ford Senior Housing (CO)	Nonprofit	$ 10,000	11/4/83	HUD Section 202	Elderly New Construction	31
25.	Project REACH, Inc. (NY)	Nonprofit	$ 40,000	11/4/83	Combination of Loans & Grants	Elderly New Consturction	8
26.	Chico Housing Improvement (CA)	Nonprofit	$115,000	11/4/83	FmHA Section 502	Single Family New Construction	16
27.	Homes In Partnership (FL)	Nonprofit	$ 50,000	11/4/83	FmHA Section 502	Single Family New Construction	19
28.	Villa de Tularosa (NM)	Nonprofit	$ 5,000	11/4/83	HUD Section 202	Elderly New Construction	22
29.	Tri-County Dev. Corp. (MD)	Nonprofit	$200,000	11/4/83	FmHA Section 515	Multi-Family New Construction	22
	DISCRETIONARY LOANS						
1.	*Lake Community Development, (FL)*	*Nonprofit*	*$ 2,500*	*3/83*	*FmHA 502*	*Self-Help New Construction*	*12*
2.	*Cielo Azul, (NM)*	*Nonprofit*	*$ 3,095*	*6/83*	*FmHA 515 Coop*	*Multi-Family New Construction*	*30*
3.	*Villa de Tularosa Senior Hsg., (NM)*	*Nonprofit*	*$ 4,082*	*6/83*	*HUD 202*	*Elderly New Construction*	*22*
4.	*Greenport Housing, (NY)*	*Nonprofit*	*$ 5,000*	*8/31/83*	*FmHA 515*		*30*
5.	*Yuma County HDC, (AZ)*	*Nonprofit*	*$ 2,500*	*8/83*	*FmHA 515*		*20*
6.	*Rural Housing Improvement, (MA)*	*Nonprofit*	*$ 10,204*	*10/20/83*	*Conventional*	*Innovative Design*	*1*
7.	*CHIP, (CA)*	*Nonprofit*	*$ 10,204*	*10/23/83*	*FmHA 502*	*Self-Help*	*16*

* Represents increase in existing loan - no new units

1983 LOAN FUND ACTIVITY REPORT
RURAL DEVELOPMENT LOAN FUND

APPENDIX A-2

	NAME AND LOCATION	TYPE OF AGENCY	AMOUNT OF LOAN	DATE APPROVED	SUBSIDY PROGRAM	TYPE OF PROJECT	NUMBER OF UNITS
1.	Family Homes Cooperative, Inc., (WV)	Nonprofit	$ 30,000	1/21/83	State Funds	Superinsulated House (low cost)	1
2.	Richgrove Community Services District	Public	$ 50,000	4/15/83	FmHA	Self-Help Subdivision	42 lot Self-Help Subdivision
3.	Rural Housing Improvement, (MA)	Nonprofit	$ 50,000	7/15/83	FmHA 515	Rent subsidy Prog.	10
4.	Tri-County Development Co. (MD)	Nonprofit	$204,000 *	7/15/83	FmHA 515	Multi-family New Construction	(20) **
5.	Southeast Alabama Self-Help Housing Association (SEASH) (AL)	Nonprofit	$250,000 CD	9/23/83	Combination/loans, grants & convtion.	Single Family New Construction	40
6.	Keuka Housing Development (NY)	Nonprofit	$115,000	11/4/83	FmHA 515	Multi-Family New Construction	30
7.	Tri-County Development Corp. (MD)	Nonprofit	$ 21,000	11/4/83	FmHA 502	Single Family New Construction	1
	DISCRETIONARY LOANS						
1.	*Amadore-Tuolumne*	*Community Action Prog.*	*$ 10,204*	*3/83*	*State Hsg. Fin. Ag.*	*Single Family Innovative Design*	*2*

* look at Risk

** Represents increase in previous loan - no new units

1983 LOAN FUND ACTIVITY REPORT
RURAL Water/Wastewater LOAN FUND

APPENDIX A-3

	NAME AND LOCATION	TYPE OF AGENCY	AMOUNT OF LOAN	DATE APPROVED	SUBSIDY PROGRAM	TYPE OF PROJECT	NUMBER OF UNITS
1.	Town of Schuyler Falls, (NY)	Nonprofit	$ 9,500	10/27/83	FmHA	Locate & Drill Test Wells	
2.	Village of Burke, (NY)	Nonprofit	$ 9,500	10/27/83	FmHA	Preliminary Engineering	
3.	Groveland (Brigham County) (Idaho)	Nonprofit	$ 2,000	10/08/83		District Formation Costs	

STATEMENT OF JOHN PHILIPS, VICE CHAIRMAN, AIA HOUSING COMMITTEE, THE AMERICAN INSTITUTE OF ARCHITECTS

Senator STENNIS. Mr. John Philips, you are the next witness. Please, you can proceed now. You are welcome here and we are interested in what you have to say.

Mr. PHILIPS. My name is John Philips, a principal in the architect firm of Treby, Howard, Philips, and vice chairman of the American Institute of Architect Housing Committee.

I am pleased to present the views of the AIA on fiscal year 1985 appropriations for the Department of Housing and Urban Development. While I am making a brief presentation, I would ask that the full statement be included in the record.

Senator STENNIS. Without objection, it will be so ordered.

SYNOPSIS OF STATEMENT

Mr. PHILIPS. The American Institute of Architects has maintained a long-standing commitment to the improvement of housing conditions and the betterment of our urban communities. Our policies have favored a strong Federal role in housing and community development as a part of a close working partnership between the private sector and Government in finding solutions to urban problems.

The AIA joins with many other national organizations in expressing a deep concern about the Federal deficit and its increasing impact on interest rates. However, the domestic program areas of the budget have already experienced heavy reductions far out of proportion to other budget areas.

Further reliance on cuts in these programs will not result in a meaningful progress toward balancing the budget. Housing assistance programs have suffered the greatest budget cuts of all domestic programs combined.

The AIA is particularly concerned in the area of housing assistance and the degree to which the Federal Government has retreated from its assistance of new construction and substantial rehabilitation of housing for low- and moderate-income people.

In fiscal year 1981, the Federal Government reserved assistance for 130,000 new and substantially rehabilitated units through HUD. For fiscal year 1985, HUD reservations for new and substantially rehabilitated units would total 18,500 units and the administration's proposal to deobligate 18,200 units of section 8 and public housing units that are planned but unstarted will virtually offset even the small gains that would otherwise occur from new reservations.

Without Federal assistance, new and substantially rehabilitated units for low- and moderate-income people cannot be developed in most parts of the country.

The administration program for assistance housing for fiscal year 1985 envisioned $9.1 billion in budget authority, sufficient to fund 100,000 units of housing specifically for low-income tenants. Of this amount, $6.23 billion represents new budget authority. The difference in the two amounts comes largely from the deobligation of 18,200 units of section 8 and public housing planned for construction but not yet started.

The AIA believes the funds freed due to unit cancellation should be reapplied to fulfill the earlier congressional obligation and prevent the loss of units intended to be assisted. The funds should not, however, substitute for new funds needed to maintain the Federal commitment to housing at a consistent level from year to year.

Fiscal year 1985 administration budget recommends full implementation of the housing voucher program first enacted as a demonstration program last year. Acceptance of the administration's recommendation would terminate the section 8 housing program. The American Institute of Architects opposes the recommendation for several reasons:

First, any savings it assumes are somewhat illusory. Second, the voucher program was enacted last year as a demonstration because it entails certain fundamental changes in housing assistance policy that deserve to be tested. It makes little sense to enact a voucher program as a demonstration and then fully implement the program before it has had a chance to demonstrate its performance.

Areas of section 292 loans——

Senator STENNIS. Mr. Philips, pardon me, your time has run off and left you. Do you want to close with a sentence or two?

Mr. PHILIPS. Since I asked that the overall record be entered, all I can do is close at this point with recommendations of some other programs that are in the record. I can say that would conclude my testimony. I thank you for the opportunity to appear and if you do have some questions, I will be pleased to try and answer them.

Senator STENNIS. We thank you for your testimony. All of it and testimony on HUD and EPA projects, budgets, so forth. We share the concern you raise here relative to retaining the demonstration nature of the housing voucher program. In addition, the level of funding for section 202, that is housing for the elderly, as I understand, and the potential adverse effects of raising the interest rate above the congressionally mandated 9.25 percent will also be carefully considered.

That concerns all of us, too, that interest. I notice it has started back up. That is the old troublemaker, you know.

Mr. PHILIPS. Interest and inflation, sir.

Senator STENNIS. Beg your pardon?

Mr. PHILIPS. Interest and inflation.

Senator STENNIS. Yes, they are arch-enemies of civilization. We will take seriously what you say.

Mr. PHILIPS. Thank you very much.

[The statement follows:]

STATEMENT OF JOHN PHILIPS, AIA, ON BEHALF OF THE AMERICAN INSTITUTE OF ARCHITECTS

My name is John Philips a principal in the architectural firm of Treby, Howard, Philips and Vice-Chairman of the American Institute of Architects' Housing Committee. I am pleased to present the views of the AIA on FY 1985 appropriations for the Department of Housing and Urban Development. I am accompanied today by Albert C. Eisenberg, Director of Government Affairs for the AIA.

The AIA has maintained a long-standing commitment to the improvement of housing conditions and the betterment of our urban communities. In fact, we issued our first urban affairs policy statement sixty years ago. Our policies have favored a strong federal role in housing and community development as part of a close working partnership between the private sector and government in finding solutions to urban problems.

The AIA joins with many other national organizations in expressing a deep concern about the federal deficit and its increasing impact on interest rates. The cost and availability of credit significantly affect the health of our profession, and we support vigorous Congressional efforts to reduce the deficit. In our examination of the federal budget, however, it becomes clear that the domestic program areas of the budget, particularly those programs principally benefiting low and moderate income people, have already experienced heavy reductions far out of proportion to other budget areas. Further reliance on cuts in these programs will not result in meaningful progress toward balancing the budget. Housing assistance programs have suffered the greatest budget cuts of all domestic program areas combined. Under the Administration budget, they would receive only 15 percent of the amount provided in FY 1981. Additionally, these programs have declined as a proportion of federal spending as other budget areas have increased substantially. According to the Low Income Housing Information Service, subsidized housing programs in 1980 received 19 cents for every dollar spent on the military, while for FY 1985, these programs would receive only one and a half cents for each military dollar.

HOUSING ASSISTANCE

The AIA is particularly concerned about the degree to which the federal government has retreated from its assistance of new construction and substantial rehabilitation of housing for low and moderate income people in favor of increased responsibility by state and local government and the private sector for these concerns. In FY 1981, the federal government reserved assistance for 130,000 new and substantially rehabilitated units through HUD, or over half of the total HUD units reserved. For FY 1985, HUD reservations for new and substantially rehabilitated units would total 18,500 or only 18.5 percent of the number of units projected. And the Administration's proposal to deobligate 18,200 units of Section 8 and public housing that are planned but unstarted will virtually offset even the small gains that would otherwise occur from new reservations.

Without federal assistance, new and substantially rehabilitated units for low and moderate income people cannot be developed in most parts of the country. And the need for this assistance for modest income groups has been demonstrated even in the best of economic times. Moreover, rental housing production, in general, is failing to keep pace with the demand for additional units resulting from increased family formation and the losses to the stock through deterioration and conversion. There are particularly serious problems of housing availability and suitability for large families and the frail elderly. While we support action to fund the new rental rehabilitation and development grant programs for this year and next, we also recognize that the rehabilitation program envisions only moderate rehabilitation, and the development grant program will fail to reach very low income people directly, although it will serve the important purpose of relieving rental housing shortages in specific locations.

It is true that the federal withdrawal from the housing construction field has resulted in greater flexibility for states and localities to solve their own housing problems, as they determine them, and it has generated healthy state and local debate over spending priorities. These benefits, nevertheless, are far outweighed by the hardships that the housing and urban assistance cutbacks have brought to low and moderate income people and to distressed communities. Inability of state and local government or of the private sector to fill the funding gap has meant that some serious needs continue to go unmet.

The President's Commission on Housing reported in 1982 that more than 10 million very low income households pay more than 30 percent of their income in rent, while 2.2 million of these households pay more than 50 percent of their income toward their rent. At the same time, the report indicated that 2 million American households live in housing of inadequate quality. A number of cities have waiting lists for assisted housing stretching two years or more. It is reasonable to assume that the situation has actually worsened since that survey was concluded, in light of recent studies showing that the proportion of people living in poverty has increased in the last four years, and in light of the failure of the economic recovery to reach many communities.

The Administration program for assisted housing for FY 1985 envisions $9.1 billion in budget authority, sufficient to fund 100,000 units of housing specifically for low income tenants. Of this amount, $6.234 billion represents new budget authority. The difference in the two amounts comes largely from the deobligation of 18,200 units of Section 8 and public housing planned for construction but not yet started. The AIA believes that the funds freed due to unit cancellation should be reapplied to fulfill the earlier Congressional obligation and to prevent the loss of units intended to be assisted. The funds should not, however, substitute for new funds needed to maintain the federal commitment to housing at a consistent level from year to year.

HOUSING VOUCHERS

The FY 1985 Administration budget recommends full implementation of the housing voucher program first enacted as a demonstration program last year. Under the recommendation, 87,500 vouchers would be provided to very low income families at a cost of $1.572 billion, which compares with 15,000 vouchers costing $272 million this year. Acceptance of the Administration's recommendation would terminate the Section 8 existing housing program, which this year is scheduled to distribute 56,000 certificates at a cost of $3.82 billion. By switching to a voucher program, the Administration proposes to aid more families at less cost in budget authority. The savings would then revert to the Treasury.

The AIA opposes the recommendation for several reasons. First, any savings it assumes are somewhat illusory. The difference in budget authority results almost entirely from the shorter contract term of vouchers, which runs for five years, instead of the fifteen years provided under the Section 8 existing program. Second, the voucher program was enacted last year as a demonstration because it entails certain fundamental changes in housing assistance policy that deserve to be tested, particularly the program's major feature which allows people to pay more or less than 30 percent of their income in renting an apartment depending on the rent level of the unit they choose. The program's subsidy may, in fact, be too low to permit people realistically to find suitable dwellings at affordable rents. It makes little sense to enact the voucher program as a demonstration and then fully implement the program before it has had a chance to demonstrate its performance.

Should the subcommittee, however, decide to move to a full scale voucher program, then any budget authority savings should be coupled with additional contract authority and made available to additional needy families rather than returned to the Treasury.

Section 202 Loans for Elderly and Handicapped

Because of other housing cutbacks the Section 202 program is today the principal federal construction assistance program for low income people, a role it was never expected to play. The Administration has once again recommended funding sufficient for the development of 10,000 units of rental housing specifically designed for elderly and handicapped low income persons. This is the same amount the Administration has proposed for each year since 1981. By contrast, the White House Conference on Aging in 1981 called for a yearly minimum of 20,000 units of Section 202 housing in recognition of the rapid rate at which our population is aging. Congress responded to this need by providing for 14,000 units in Fy 1984. We believe that this level of program activity is the minimum this Subcommittee should consider.

Additionally, the AIA is concerned that the Administration plans to loan money under this program at 10.3% interest. This interest rate will substantially raise construction and debt service cost. While the Administration could raise the amount of rental subsidy available for each assisted unit, the Administration has not indicated it would do so. Should it choose to match the higher interest rate without increasing the rental subsidy, then the program's non-profit sponsors and their localities would be called on to make up the difference. That, we believe, will simply render the program infeasible in many communities. Certainly, it would affect the quality of those projects that could be built. The AIA strongly urges the Congress to maintain the current interest rate ceiling of 9.25 percent.

CONGREGATE HOUSING SERVICES

The Congregate Housing Services program should receive an FY 1985 appropriation of $4 million, the same as for FY 1983 when the program last received funding. The program was originally developed to demonstrate that comprehensive, locally-determined packages of social services which would be tailored to individuals and specific projects and funded on a multi-year basis could help elderly and handicapped residents of public housing and Section 202 projects avoid costly, unnecessary placement in nursing homes. The program has succeeded in demonstrating this.

Another purpose was to draw forth housing designs that would more appropriately serve frail elderly and handicapped residents of these projects. The availability of services can play an important role in building design. The additional appropriation for congregate services we believe would help ensure that Section 202 and public housing projects contain those design features most responsive to the needs of their frail elderly and handicapped residents.

COMMUNITY DEVELOPMENT BLOCK GRANTS (CDBG)

The CDBG program is the federal government's community development and revitalization workhorse. It offers large and small localities the opportunity to address their own needs--from housing rehabilitation and handicapped access to buildings, to historic preservation and economic development assistance. The AIA proposes that the funding for this program be increased at least by the amount necessary to offset the rise in the cost of living.

URBAN DEVELOPMENT ACTION GRANTS (UDAG)

The UDAG program is one of the most successful federal urban revitalization tools. The 474 projects approved in FY 1983 alone are expected to create or preserve 76,000 jobs and leverage $3.4 billion in private funds, with a federal commitment of less than half a million dollars. Since 1981, the program's appropriation has dropped from $675 million to only $440 million; yet, the number of eligible communities and segments of communities has grown. This year, 1800 small cities are expected to be added to the eligibility pool. The AIA recommends that the appropriation be increased at least to the amount necessary to offset cost of living increases expected to occur during FY 1985.

RESEARCH

We are pleased that the research budget would increase from $19 million to $21 million. In light of the limited amount of funds available for federal housing efforts, we believe that the subcommittee should direct HUD to focus its research efforts more on design techniques that can reduce per unit construction and operation costs for HUD-assisted, as well as private housing.

SECTION 108 LOAN GUARANTEES

The Section 108 loan guarantee program permits entitlement CDBG communities to borrow against future entitlements for land acquisition and rehabilitation of publicly owned real property. The program provides an important urban revitalization tool for urban communities to meet up-front development costs at a lower than market rate. Since the program was enacted, 180 separate applications from eligible communities have been submitted to HUD, with some communities participating more than once. The Administration favors termination of the program, while we recommend continuation at the FY 1984 level of $225 million.

ENVIRONMENTAL PROTECTION AGENCY

The AIA would like to take this opportunity to urge the Subcommittee to adopt an EPA operating budget of $1.66 billion, equivalent in purchasing power to the $1.353 billion adopted for FY 1981. Broad national consensus exists for strong action to combat air and water pollution and toxic substances, and the AIA's policies reflect that consensus, supporting a harmonious relationship between the built and natural environment. Since FY 1981, the EPA budget has eroded, signaling a reduced commitment to pollution control, and that commitment should be renewed in FY 1985 with an appropriation of $1.66 billion.

Mr. Chairman, this concludes my testimony. Thank you for giving me the opportunity to appear. I am happy to answer any questions you may have.

ENVIRONMENTAL PROTECTION AGENCY

STATEMENT OF JONATHAN LASH, SENIOR STAFF ATTORNEY, NATURAL RESOURCES DEFENSE COUNCIL, INC.

Senator STENNIS. That brings us to Jonathan Lash. You know the rules here. We don't like to limit your time, but we have to.

Mr. LASH. I understand. My name is Jonathan Lash, and I am senior staff attorney with the Natural Resources Defense Council. My testimony today is on behalf of NRDC, the Sierra Club, and Friends of the Earth. I ask my written testimony be entered in the record, and I will quickly summarize it.

Senator STENNIS. That request will be granted gladly.

LARGER OPERATING BUDGET REQUESTED

Mr. LASH. Thank you, Mr. Chairman. My message is very simple. We are asking the committee to give EPA a larger operating budget than the President has requested. It is not a new request. We made the same request last year; we made the same request the year before; we made the same request the year before that. We think EPA doesn't have the money to do what you, the Congress, has instructed it to do by law.

It doesn't have the resources and that, in the end, injures the American peoples' health and the environment which they enjoy.

There are really four ways you can judge whether the Agency has sufficient resources. You can look at what it's staffs recommend. It's staff this year recommended an operating budget well in excess of $1.4 billion. You can look at what the EPA Administrator himself recommends to the President for a budget. Administrator Ruckelshaus this year recommended an operating budget in excess of $1.35 billion. You can look at the extent to which the Agency has been able to get its obligations under law. If you look at compliance with the Clean Water Act, a GAO study has found that 80 percent of major water pollution sources are not in compliance with the law.

You look at compliance with the Hazardous Waste Act, another GAO study has found two-thirds of the hazardous waste facility not in compliance with the law. Only 1 percent have received permits EPA is required to issue.

If you look at the Air Act, EPA, under inspection program using a laser detection device, has found 75 percent of major air pollution sources not in compliance with the law, and EPA's Air Office has repeatedly answered in court when a judge instructed them to move quickly in issuing required standards that they are unable to do so because they didn't have the resources necessary to comply with the explicit mandated law.

If you look at pesticides, 85 percent of pesticides now in use have not been adequately tested to determine if they cause cancer. EPA is more than 10 years overdue in examining those pesticides. They can't do it; they don't have the resources.

If you look at research, important health research that would help us to regulate rationally has been cut off short because EPA doesn't have the resources.

Another way to judge whether the Agency has sufficient resources is to look at what the States have to say. This committee has received testimony from the States indicating that they desperately need additional resources to implement the programs for which they are responsible. One study by a group of State officials found that they need to increase their hazardous waste staff threefold in order to protect the American public.

Swift and consistent implementation of the law is essential not only to the protection of the environment, but to give industry a stable environment in which to operate, a stable regulatory environment. The approach EPA has had to take because of its lack of resources in recent years of halting responses to crisis not only injures the environment and health of the American people, but provides an impossible atmosphere in which industry has to try to foresee what the standards will be next year.

Thank you very much, Mr. Chairman, for the opportunity to testify. We have made specific recommendations for budget increases in our written testimony. If you have any questions, I will be happy to respond.

Senator STENNIS. You seem to know your subject, and you are doing fine work, we feel. For our 1985 budget, EPA is requesting an 11-percent increase for the salaries and expense account. At our hearing in March, the Administrator stated that EPA would have to hire 150 people per month during all of the fiscal year 1985 if their budget request was approved by Congress. This is the fastest rate of hiring in EPA's history.

Are you recommending the S&E account be increased by 25 percent?

S&E ACCOUNT INCREASE RECOMMENDED

Mr. LASH. Yes, sir, and the Agency, in fact, has not had difficulty meeting those hiring levels. I talked to Agency officials last week and they told me that, in fact, they will be able to exceed their hiring levels during the coming months if they have additional funds.

Senator STENNIS. We are not going to ignore your request, but you know we have a lot of requests for increases. Something has got to be done about getting our fiscal affairs, our budget affairs in better order.

I haven't been here very long, but I can remember when we ran the whole Government with $100 billion a year. Now we pay around $130 billion per year for the interest alone on the national debt. Somebody somewhere is not doing a good job.

Mr. LASH. With all respect, Mr. Chairman, I agree that is a major problem facing our society, but we have to be careful that we don't build up a deficit in terms of health protection in which the savings we make today we will have to pay for tomorrow in damage to our citizens' health.

Senator STENNIS. I just relate that to show it is hard to get around, but you are right, somethings can't be put off, can't be postponed, can't be cut down. It is helpful to have you gentlemen come here and give us your testimony. Thank you, again.

[The statement follows:]

STATEMENT OF JONATHAN LASH, ATTORNEY, ON BEHALF OF THE NATURAL RESOURCES DEFENSE COUNCIL, THE SIERRA CLUB, AND FRIENDS OF THE EARTH

Mr Chairman, my name is Jonathan Lash. I am a senior staff attorney with the Natural Resources Defense Council. I am testifying today on behalf of NRDC, the Sierra Club, and Friends of the Earth.

One year ago, we urged this committee to restore the operating budget of the Environmental Protection Agency to Fiscal Year 1981 levels. The subcommittee narrowly rejected an amendment that would have accomplished that objective.

Subsequently, William Ruckelshaus, then newly confirmed as Administrator of EPA and acting at the request of OMB Director David Stockman, wrote to the committee urging rejection of efforts to increase substantially the agency's operating budget. With the new Administrator advocating restraint, the full committee, too, narrowly voted down an amendment to increase EPA's operating budget.

Later, Mr. Ruckelshaus changed his views about the agency's needs. Not only did he seek a supplemental appropriation for Fiscal Year 1984, he also submitted a budget request to OMB for FY 1985 that would have returned EPA to FY 1981 levels in nominal dollars and that matched the figure sought by the members of this committee whose amendment to the FY 1984 appropriation was defeated.

Ruckelshaus's request to OMB for the FY 1985 budget was not an inflated figure. In fact, he and Deputy Administrator Alm were ruthless in cutting back on program managers' requests for funds. The Administrator's request, far from representing a piece of gaming, was prepared on the understanding that he had been given an explicit mandate to determine the agency's needs and seek the funds necessary to restore its capacity to fulfill its responsibilities under law. However, if there was any such mandate, OMB rejected it and proposed sharp cuts in the agency's budget proposal, some of which were restored when the Administrator appealed his budget but many of which were not.

The President's budget proposal for the EPA will not provide adequate resources for the agency to implement and enforce its statutory mandate. The agency is and has been behind in the completion of numerous tasks that affect the health and safety of Americans, it openly concedes that it does not have the resources to move ahead expeditiously in completing those tasks, and the President's proposal will not provide those resources. It will not provide what the agency needs; it will not even provide what the Administrator sought.

We recommend that the committee substantially increase the Agency's operating budget. We believe that, because the agency's workload today is far greater than it was four years ago, the budget should be higher in real terms than it was four years ago. That would require an increase of 75 percent above the President's request. We are, however, aware that the committee is less than likely to approve such an increase and that the Agency would have difficulty in absorbing so large an increase in a single year. Therefore, we recommend that the operating budget be increased to $1.424 billion and that Superfund be increased to the level initially requested by Administrator Ruckelshaus. The specific breakdown of the increases we request is detailed in Table 1.

Table 1

EPA OPERATING BUDGET: ($ in millions)

Media	FY 1981 App.	FY 1984 App.	*FY 1985 EPA requ.	FY 1985 Admin.	FY 1985 Env. Alt.
Salaries and Expenses	561.7	574.9	683.1	639.3	717.3
Building & Facilities	4.1	2.6		10.5	10.5
Research & Development	250.5	142.7	211.2	163.4	243.7
Abatement, Control & Compliance	534.8	394.0	440.6	396.0	452.1
Total EPA Operating Budget:	1,351.1	1,114.2	*1,334.9	1,209.3	1,423.5
Superfund:	74.7	410.0	653.0	640.0	653.0
State Grants:	274.0	237.0		237.7	248.8

*Ruckelshaus request to OMB

We cannot review each element of the operating budget in detail. The following, however, are some examples of areas in which it is clear that the President's proposal is inadequate.

Air

In recent months, the EPA air program has on numerous occasions explained its inability to fulfill mandatory duties under the Clean Air Act by its lack of resources. In two court filings and a letter to the Natural Resources Defense Council, EPA officials have acknowledged unacceptable delays in performance of health-related regulatory duties under the Clean Air Act but have explained that the resources are simply not available to them to do the necessary work within an appropriate time.

As a consequence, the Agency has delayed and again delayed the regulation of hazardous air pollutants and the issuance of critically important new source performance standards. Three billion pounds of known or suspected carcinogens that the agency acknowledges it should have addressed are released into the air every year by U.S. industrial sources.

Pesticides

Twelve years after Congress transferred authority for the regulation of pesticides from the Department of Agriculture to EPA and required EPA to review the safety of existing pesticides, the Agency has still barely begun that process. Yet congressional investigators and a panel of the National Academy of Sciences have found that, for over 80 percent of pesticides now in use, there are inadequate health and safety test data to support the registrations of those pesticides. As a consequence, every member of the American population is exposed daily to pesticides the health effects of which are unknown.

EPA has responsibility both to regulate (or forbid) the use of pesticides to assure public safety and to set pesticide residue tolerances for food. The recent EDB crisis illustrates the inadequacy of EPA's administration of that process. The process simply cannot work in the absence of complete and reliable safety test data, and the Agency does not have the resources to review expeditiously existing pesticide registrations, call in data that are lacking, and act upon evidencethey receive when it shows that a pesticide creates a risk to human health. In fact, even the Agency's rudimentary system for gathering information on incidents of pesticide poisoning has been dismantled for lack of resources.

In the long run, accelerated EPA review of pesticide safety data will be far more efficient and therefore cheaper for the country, to say nothing of safer, than management by crisis.

Water

About 66,000 industrial facilities directly discharge millions of tons of polluting substances into our waterways each year. The Clean Water Act identified 65 of these substances as particulary hazardous, directing EPA to regulate them by July 1, 1983, later extending that date to July 1, 1984. There now exists a backlog of 40,000 expired permits, which need to be examined by the Agency. Yet at current budget levels EPA and those states with regulatory authority are only capable of issuing permits at a rate of about 12,000 per year. Permits and regulatory standards are the linchpin of the system to clean up the nation's waterways.

By 1978, scientists had identified over 700 chemical contaminants in the nation's drinking water, among them asbestos, lead, and numerous agricultural and industrial organic chemicals. Nearly 50 percent of all Americans depend upon ground water for their drinking water. Yet a 1981 EPA study found that 29% of the ground water used for drinking by communities of 10,000 people and over was contaminated by volatile organic compounds. With drinking water budget cut by 16 percent from its 1981 level, it appears unlikely that the Agency will have the resources to address, or even to identify, the host of contaminants currently in our water supply.

Both ground and surface water is also being contaminated by hazardous wastes stored or disposed of in thousands of underground tanks, landfills, pits, ponds, and wells. Eight years after the passage of RCRA, only a few of the thousands of waste facilities in the country have permits -- less than one percent. The basic regulatory scheme governing the treatment, storage, and disposal of hazardous wastes is not complete, and EPA is not even sure how much waste we produce. Considering the magnitude of the problem, a 4 percent increase from 1981 to 1985 in funding for EPA's hazardous waste program is a drop of clean water in a polluted bucket.

Enforcement

Environmental statutes have little value if no one complies with them. EPA must, to a great extent, rely upon voluntary compliance by U.S. industry. But voluntary compliance will not occur, as has been the case for the past several years, the Agency does not have a credible enforcement program. Not only has permitting under both the Water Act and the Resources Conservation and Recovery Act reached a standstill, but inspection and enforcement against those facilities not in compliance have been almost nonexistent. Both congressional investigators and EPA officials concede that 30 percent of the hazardous waste facilities in this country are seriously out of compliance with the interim regulatory program that applies to them. The General Accounting Office estimates that as many as 60 percent of dischargers may be violating clean water requirements. EPA surprise inspections with a laser device found 75 percent of major air pollution sources violating clean air rules. Yet neither states with delegated programs nor the EPA have taken any significant number of actions against those facilities. In fact, OMB made significant cuts in enforcement resources.

While the present management of EPA has made a strenuous effort to improve enforcement performance, neither EPA nor the states presently have adequate resources to monitor, inspect, and enforce.

We urge the committee to increase funds both for EPA enforcement, including the hiring of additional inspectors, and for state enforcement grants. Otherwise, the credibility of everything EPA does will be undermined.

Research and Development

Since 1981, the EPA Research and Development budget has been reduced from $250 million to $143 million. While the 1985 request for research and development is more than the 1984 appropriation, it is nonetheless lower in real dollars than the original 1972 funding of $121 million. If the 1984 and 1985 R&D requests are compared, the significant difference between the two is shown to be primarily due to acid rain research; the traditional and ongoing research dollars remain nearly constant.

Funds for research to support toxic substances regulation under the various laws have also been reduced significantly. This puts a drag not only on the research work, but also the program work, the abatement and compliance work, and the enforcement effort. And the ultimate loser is the health of the American citizen.

The public has and will demand environmental regulation to protect them from involuntary risks and to protect the environment in which they live and play from senseless damage. That regulation may be effective or not, innovative and flexible or rigid and traditional. The outcome depends on research. If EPA is not allowed to do adequate research, our desire to be protected will outrun our knowledge. The Congress should not allow that to happen.

Conclusion

Administrator Ruckelshaus has done a great deal to restore his agency's soul. The agency is no longer rife with cronyism, chaos, and vicious internecine struggles. However, he cannot restore the Agency's body without resources.

The Congress is moving more and more toward the incorporation of specific tasks and deadlines into the environmental statutes implemented by EPA, but these action-forcing mechanisms will result in controversy and conflicts instead of progress if the Congress fails to give EPA the resources necessary to complete the tasks imposed on it by law.

COUNCIL ON ENVIRONMENTAL QUALITY

STATEMENT OF ROGER E. McMANUS, VICE PRESIDENT FOR PROGRAMS, CENTER FOR ENVIRONMENTAL EDUCATION

Senator STENNIS. That brings us, ladies and gentlemen, to Mr. Roger E. McManus.

Come around, Mr. McManus. You are with the Center for Environmental Education?

Mr. McMANUS. Yes, Mr. Chairman.

Senator STENNIS. We are pleased you are here, and you proceed in your own way. Unfortunately, you do have that 5-minute limitation.

Mr. McMANUS. I will summarize my statement.

Senator STENNIS. Without objection, your full statement will be placed in the record at the conclusion of your oral summary.

SUMMARY OF STATEMENT

Mr. McMANUS. Mr. Chairman, I appreciate the opportunity to address the subcommittee today concerning the proposed appropriation of $700,000 for the fiscal year 1985 activities of the Council on Environmental Quality.

The Center for Environmental Education is gravely concerned that the Council cannot continue to fulfill its congressionally mandated responsibilities at this, its current level, of funding. This concern has been expressed by the Subcommittee on Fisheries and Wildlife Conservation and the Environment which has recommended providing a fiscal year 1985 appropriation of $1.2 million for CEQ.

The center and other major environmental organizations support this level of funding as being the absolute minimum needed to ensure effective implementation of the Council's statutory responsibilities.

CEQ's current professional staff of four individuals is faced with a wide range of responsibilities it cannot hope to fulfill at the current funding level. For example, the Nation's coordination of the National Environmental Policy Act, the linchpin of our environmental law, is left to virtually one attorney, CEQ's General Counsel.

At the February 2 hearing by the House Subcommittee on Fisheries and Wildlife Conservation and the Environment, former CEQ General Counsel Nicholas Yost, suggested 10 person-years were needed to provide adequate NEPA oversight. Because of the lack of staff resources, many traditional NEAP oversight activities have been completely abandoned. The lack of in-house scientific expertise has resulted in

NEPA oversight being reduced to solely a review for procedural compliance, without regard to the level of technical competence and quality represented by NEPA documentation.

Similarly, coordination with the Justice Department on NEPA cases has been abandoned. Nor does its current counsel have the staff resources to conduct unsolicited review of environmental assessments, environmental impact statements, nor to maintain regular contact with Federal agency staff responsible for NEPA compliance.

Review of CEQ's other general responsibilities results in similar conclusions. Most of the environmental report is written and produced by staff from other Federal agencies. CEQ's compliance with statutory requirements concerning preparation of the report is seriously in doubt under such circumstances. Virtually no work is done by in-house staff to monitor and assess the environmental trends, despite congressional directives and affirmation by the Council that it will issue publications addressing this issue. Such issue, as well as many other statutory obligations, are left to the attention of detailees from other agencies. No matter what their personal qualifications, such detailees cannot provide the continuity and neutrality envisioned by Congress which has directed that CEQ provide analyses and advice independent of other agencies.

I think one of the important things to remember about the need for adequate resources for CEQ, one of the important points in support of such additional resources, is the continued support of the line subcommittees that have recommended authorizing the Office of Environment Quality for 3 more years.

Another measure Congress views on issues addressed by CEQ and the Council itself is continued stream of proposed bills that address those concerns and incorporate the Council in administering the proposed functions. Many of the proposed laws reiterate the directives of NEPA and the Environmental Quality Improvement Act. One of our major concerns is why we should be considering additional new laws to address old concerns when we already have established a line agency that is supposed to address those concerns.

It is my belief, based on continued need, and my experience with the Council's willingness to fulfill its responsibilities, an effective CEQ should be maintained through the level of funding supported by Congressman Breaux's subcommittee, which was about $1.2 million.

This modest sum was arrived at based on the need to hire some very specific staff for the Council to fulfill its responsibilities. In this case, we are talking about the necessity, for example, to hire an additional attorney or two, an additional biologist or atmospheric scientist, a person to administer production of the annual report, a trends expert—these kinds of very specific requests which we feel are critical to the Council's implementing its congressionally mandated responsibilities.

Thank you, Mr. Chairman.

Senator STENNIS. We thank you very much. Your request is going to be considered—$500,000. We are pleased with what the Council is doing relative to the two water resources studies mandated by Congress.

We wish money wasn't so tight, but we have to meet conditions. That is true in life; true in government.

Mr. McManus. I appreciate that, Senator. I guess the major concern that we have is with the implementation of the National Environmental Policy Act because of its central importance to all of our environmental laws, better implementation of that act should have a multiplicative effect on benefits to society, and we are very concerned having one attorney or one attorney plus additional time from other staff is far too little to implement an important statute for the Nation as a whole.

Senator Stennis. I would like to learn more about it myself, to be frank with you. Up here, we run and fight all the time to do this and do that. These matters will certainly be considered. We thank you, again, for your testimony.

Mr. McManus. Thank you, Mr. Chairman.

Senator Stennis. This is a matter of interest to other witnesses here. You will be heard. Senator Garn will be here at 2:15. He is interested in this matter. I have talked to him about it. He knows something about it, too. I urge those of you who haven't been heard yet, just be a little patient, and he will be here.

My name is John Stennis. I am one of the Senators from Mississippi. I have seen these programs bloom like roses, and then if you don't give them the money, though, they can't operate, can't get results. It takes more and more. We have got to be more careful about spending money. These sums here are very small. They are not the ones that break the budget. We are living in a time where we have to have a far-flung military organization that goes around the world on the sea, under the sea, on the ground, everywhere. We have got to have that firepower and other things, too, of course. We have just got to learn how to get along, make the money go a little further.

In the old days, that was true at the family level and is some now. In the old days, and I remember those days, too, you just cut your outgo to fit your income. There wasn't anyway around that. You could borrow a little money from time to time, but things had to come out even—why, if you had a bad crop year, where I live, you would tighten your belts up and shoot for a bigger crop the next year.

Well, we have the greatest country in the world, a fine system of government, and we keep plugging along and keep the system going on the principles it is based on, and everybody does have a part in running the Government and setting the policies, and they have a responsibility, too.

I thank you, again. We will take a recess now, as I said. I am going to try to come back myself, but I have a list of things here already for today. I will go to some of them now and try to come back if I possibly can. Thank you very much.

We will take a recess now until 2:15.

[A brief recess was taken.]

[The statement follows:]

STATEMENT OF ROGER E. MCMANUS, VICE PRESIDENT FOR PROGRAMS, CENTER FOR ENVIRONMENTAL EDUCATION

I appreciate the opportunity to address the Subcommittee today concerning the appropriation for $700,000 proposed by the President to support the fiscal year 1985 activities of the Council on Environmental Quality (CEQ) and the Office of Environmental Quality (OEQ). This is the same level of funding provided for the Council in fiscal year 1984 at the urging of the House Subcommittee on Appropriations for HUD - Independent Agencies.

The Center for Environmental Education is gravely concerned that the Council cannot continue to fulfill its Congressionally mandated responsibilities at this level of funding. At a February 2 hearing on the reauthorization of OEQ, Representative John B. Breaux (D-La), chairman of the House Subcommittee on Fisheries and Wildlife Conservation and the Environment, noted: "The council is trying to do a monumental task Congress has given it on a shoe string budget." "We should either increase the budget and staff or disband CEQ and put them in other agencies." After detailed review of the Council's existing responsibilities and interviews with CEQ staff that Subcommittee has recommended reauthorizing OEQ and providing a fy 1985 appropriation of $1.2 million total for both OEQ and CEQ. The Center and other major environmental organizations support this level of funding as being the absolute minimum needed to ensure effective implementation of the Council's statutory responsibilities.

Current Inadequate Funding and Staff Levels

In a letter to Congressman Breaux, dated February 27, 1984, the Center, National Audubon Society, National Wildlife Federation, Natural Resources Defense Council and the Sierra Club noted: "Criticisms of the current Council's performance must be viewed in light of its inadequate budget. Once, however, having received funding at a level we recommend, we expect CEQ to perform its functions effectively. If it does not, Congress would be justified in eliminating the council and assigning its functions to other agencies." Accompanying that letter was a statement that contained a detailed analysis of CEQ's statutory responsibilities and staff needs, and concluded that the Council requires between $1.2 million to $1.5 million to fulfill its responsibilities effectively.

That letter and statement have been submitted to this Subcommittee. In addition I have provided the Subcommittee with a copies of questions requested by the Senate Subcommittee on Toxic Substances and Environmental Oversight and the House Subcommittee on Appropriations on HUD - Independent Agencies and CEQ's responses to those questions. These answers coupled with CEE's statement before the House Subcommittee on Fisheries and Wildlife Conservation and the Environment clearly document an intolerable situation. CEQ's professional staff of four individuals is faced with a wide range of statutory responsibilities that it cannot hope to fulfill.

For example, the nation's coordination of the National Environmental Policy Act (NEPA), the linchpin of our environmental law, is left virtually to one attorney, CEQ's General Counsel. At the February 2 hearing by the House Subcommittee on Fisheries and Wildlife Conservation and the Environment, former CEQ General Counsel, Nicholas Yost, suggested 10 person years were needed to provide adequate NEPA oversight. In an April 20, 1984 letter to the Honorable Edward P. Boland, chairman of the House Appropriations Subcommittee on HUD-

Independent Agencies, Mr. Yost stressed the critical need for increased appropriations to enable the Council to provide adequate NEPA oversight.

The inadequacy of the present resources devoted to NEPA are clearly demonstrated by the responses to the questions submitted to the Council by both the House and the Senate. What is suggested by the responses is that CEQ's General Counsel is expected to review proposed revisions to federal agency guidelines and regulations for implementing NEPA (approximately 16 proposals per year), to review formal referrals from the agencies (several referrals are anticipated in fy 1985), to resolve disputes concerning which agency should take the lead in preparing Environmental Impact Statements (six to eight disputes a year), to respond to more than one request a day from federal agencies concerning their NEPA implementation, to respond to approximately three inquiries a day concerning NEPA from state agencies and private organizations and citizens, to work on special analyses and compilations relating to NEPA implementation by the federal agencies, and to respond to requests from foreign nations to assist in their application of NEPA type procedures (approximately five to eight requests a year).

In addition, the General Counsel is expected to oversee implementation of several Executive Orders, serve as staff to CEQ for fulfilling its responsibilities under the International Environmental Protection Act of 1983 and the Marine Mammal Protection Act, represent CEQ in government groups addressing Legal and Administrative Measures of Environmental Protection - US/USSR Environmental Agreement, the International Whaling Commission and Wildlife Law Enforcement, prepare drafts for the Environmental Quality Report, and give several major speaches a year concerning NEPA and its implementation.

Clearly, many of the current General Counsel's assignments are not receiving the attention they deserve. For example, requests for NEPA assistance from state agencies and private citizens are routinely neglected and even formal requests for assistance from other nations have not been responded to favorably.

In addition, other traditional NEPA oversight roles have been completely abandoned. The lack of inhouse scientific expertise has resulted in NEPA oversight being reduced to solely a review for procedural compliance, without regard to the level of technical competence and quality represented by NEPA documentation - notes the Council: "That type of review is not currently performed at CEQ." Similarly, coordination with the Justice Department on NEPA cases has been abandoned. One can only speculate on the resulting costs to the taxpayers because Justice and CEQ have not compared notes on cases concerning worst case analysis and other aspects of NEPA compliance. Nor, does the current Council have the staff resources to conduct unsolicited review of environmental assessments and environmental impact statements - nor to maintain regular contact with federal agency staff responsible for NEPA compliance. Obviously, a modicum of such oversight, such has been provided in the past, would greatly help ensure that compliance by the agencies is in conformance with legal requirements and adequately addresses substantive concerns.

Review of CEQ's other general responsibilities results in similar conclusions. While the General Counsel prepares the NEPA chapter for the Environmental Quality Report and CEQ's economist also prepares drafts, most of the report is written and produced by staff from other federal agencies. CEQ's compliance with statutory requirements concerning preparation of the report is seriously in doubt under such circumstances. The reduced quality of the report and delays in its publication are testimony to its production by a committee of federal agency representatives.

Virtually no inhouse work is done to monitor and assess environmental trends, despite Congressional directives and affirmation by the Council that it will issue publications addressing this issue. Such issues, as well as many other statutory obligations, are left to the attention of detailees from other agencies. No matter what their personal qualifications, such detailees cannot provide the continuity and neutrality envisioned by Congress which has directed that CEQ provide analyses and advice independent of other agencies.

The current Council simply does not address many of its statutory responsibilities, because, as it responded to questions received from Congress, it has "No Resources." This is the case for specific statutory responsibilities as well as for the broader mandates provided by NEPA, the EQIA and related Executive Orders.

Continued Need for an Effective CEQ

The Senate Subcommittee on Toxic Substances and Environmental Oversight and the House Subcommittee for Fisheries and Wildlife Conservation and the Environment has affirmed the need for CEQ through its proposed reauthorization of OEQ and its recommendation for appropriations. As we noted in our February 27 statement: "The Council's diminished role is not the result of its responsibilities being assumed by another federal agency or being made unnecessary by better cooperation between federal agencies, nor has the need for CEQ been diminished by a drastic reduction in the quantity or complexity of threats to the quality of the human environemnt. Indeed, the threats to the environment are greater than ever, as are the opportunities for countering those threats successfully." It is my belief, based on this continuing need and my experience with the current Council's willingness to fulfill its responsibilities, that an effective CEQ should be maintained through the level of funding supported by Congressman Breaux's Subcommittee.

Another measure of Congress' views on the issues addressed by CEQ and the Council itself is the continued stream of proposed bills that concern those issues and incorporate the Council in administering the proposed functions. Examples include: H.J. Res. 248 - Calling on the executive branch to conform to the recommendations of the Global 2000 report, H.R. 3070 - To provide for the continuous assessment of critical trends and alternative futures, a proposed bill - To provide for improvements in the Nation's environmental monitoring programs, to establish a National Commission on Environmental Monitoring and to enhance United States participation in international monitoring programs, and a proposed bill - the Global Resources, Environment, and Population Act of 1983. Many of these proposed laws reiterate the directives of NEPA and the EQIA. Why is it perceived that such laws are needed to ensure federal attention to these issues when an agency has been established to fulfill that purpose? Perhaps, it is because the lack of activity to address serious environmental issues confronting the nation has led to the conclusion that additional bureaucracy is warranted. Must we reinvent the wheel, or shall we provide funding for an existing agency with a respectable track record to continue to do the job?

Recommendations

In our February 27 statement we concluded that the Council at a minimum should be provided $1.2 million for fy 1985. This, we calculated, would allow CEQ to hire one additional NEPA specialist, a biologist, an atmospheric scientist, a data trends expert, and an annual report director, and provide a modicum of money for additional required staff or for specific contracting needs. This would guarantee a staff of 16, the absolute minimum we believe is needed to maintain a viable CEQ.

As a practical matter, the fate of CEQ and its ability to perform its acknowledged critical role to protect the quality of the human environment, rests with the Congress. Increasing the Council's budget to the level requested should provide it with adequate resources to address its responsibilities so that its performance can be judged fairly.

REMARKS OF CHAIRMAN GARN

Senator GARN [presiding]. The subcommittee will come to order.

First, let me apologize for being just a little bit late, and, also, I wish to thank my colleagues who were willing to chair the subcommittee this morning for me. With all of our cross-checking of schedules, my staff omitted one thing. I serve on the Board of Regents of the Smithsonian Institution. It is a Board that meets four times a year. So it isn't one you say I will miss this one; the next one won't be until September, and that was scheduled this morning.

I do appreciate my fellow Senators who were able to take over on short notice and conduct the hearings this morning.

The first witness in this session is James M. Peirce, president, National Federation of Employees.

VETERANS ADMINISTRATION

STATEMENT OF DAVID GUSKY, LEGISLATIVE DIRECTOR, NATIONAL FEDERATION OF EMPLOYEES

Mr. GUSKY. Thank you, Mr. Chairman. I am not James Peirce. I am David Gusky.

Senator GARN. If you hadn't told me, I wouldn't have known.

Mr. GUSKY. I will briefly summarize.

The National Federation of Federal Employees appreciates this opportunity to testify on fiscal year 1985 appropriations for agencies under the subcommittee's jurisdiction. Among the issues which concern us are funding for the Veterans'Administration, Housing and Urban Development, and closure of agency printing plants.

NFFE has long been concerned about the Veterans Administration and its commitment to quality care for the Nation's veterans. NFFE represents thousands of employees who work for the VA. We are, therefore, pleased to note that the fiscal year 1985 budget request submitted by the President this year appears sufficient to meet many of the agency's needs. However, while the VA budget justification indicates that the total number of personnel is scheduled to increase by 2,200 positions by next year, the figure is deceiving.

For example, the Department of Medicine and Surgery is slated to receive an additional 2,900 positions, yet the Department of Veterans Benefits is scheduled to lose 800 positions next year, bringing the reduction to 1,198 positions since 1983.

NFFE has been pleased the subcommittee continues to recognize the essential duties performed by the DM&S personnel by providing the necessary personnel slots. We hope, however, that the subcommittee also recognizes the activities slated to lose positions are also essential to the efficient functioning of the agency. Reductions in personnel levels within the VA will ultimately harm the agency.

In order to reduce work backlogs caused by low personnel levels and to meet the increasing demand for service, the Veterans' Administration could be forced to contract out some of its responsibilities to the private sector.

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

Finally, I would like to briefly discuss the President's fiscal year 1985 budget request for HUD. The administration's budget seeks a decrease of 168 full-time permanent positions. This reduction would be accomplished through increased contracting out and through management initiatives.

The Department of Housing and Urban Development has already been subjected to considerable upheaval as a result of its field reorganizations and personnel cuts last year. The administration's proposal to further reduce personnel slots will only cause additional disruption within the agency. NFEE, therefore, hopes the subcommittee will restore these positions to the Department and halt further reorganizations unless the Department can actually prove they will produce cost savings and increased efficiency.

That concludes my statement. I will be happy to answer questions.

Senator GARN. Thank you very much. I am sure you are aware we have 18 different agencies before this subcommittee, including VA, and as we review each of those agencies, we are certainly going to be careful to try and size the staff to the workload. The subcommittee has worked very hard at that. Sometimes we find that has not been the case in some of the agencies. Some have been understaffed; others have been over because of their workload.

We will try very, very hard to match those up. For example, in examining the veteran population, we find that it is both getting older and is diminishing in numbers. What this means, there is increased need for medical services. While the DM&S workload is up 7 percent from 1979 to 1983, a lesser caseload level for compensation, pension, and burial benefits has resulted in a DVB caseload that is down 14 percent in that same period of time from 1979 to 1983.

So we will try very hard to be guided by those shifts in workload, try and match it up as best we can.

I have no additional questions for you. Thank you very much.

STATEMENT OF MARK J. RIEDY, EXECUTIVE VICE PRESIDENT, MORTGAGE BANKERS ASSOCIATION OF AMERICA

Senator GARN. Is Mr. Mark Riedy here—of course, you are here. You have to excuse me. When I have a cold like this, my mind doesn't function too well. Other than that, the fact I just had a picture taken with you—we are glad you are here. We suddenly got ahead of schedule. Senator Mathias isn't here so we will fit you in ahead.

Mr. RIEDY. I am Mark Riedy, executive vice president of the Mortgage Bankers Association of America. We appreciate this opportunity to appear before you today to testify on the fiscal year 1985 appropriations for the Department of Housing and Urban Development and for the Veterans Administration. Our comments are going to focus particularly on the need to establish sufficiently high credit budget limits for the FHA mortgage insurance and GNMA guaranty programs.

Both programs are fully supported by user fees and generate net revenues for the Government. There is no merit to artificial restrictions on the programs because such restrictions simply impede the efficiencies and cost effectiveness of the program and limit the access of FHA insured and VA guaranteed loans to the Nation's Capital market.

In the event Congress decides to continue to impose credit budget limits on the programs, however, MBA recommends ceilings be set at least as high as the low set for the current fiscal year; that is, $50.9 billion in FHA and $68.25 billion for the GNMA mortgage-backed securities program.

At this point, I would like to thank you and the subcommittee for increasing the FHA ceilings for 1983. Two increases were necessary, as you know, to accommodate the high volume of lending that occurred once interest rates finally began to decline and the housing recovery got underway. Not only did this action help buyers move back into the market quickly, but allowed many homebuyers a chance to refinance their higher rate loans and take advantage of lower, more affordable rates.

It is a fact in 1983 the housing recovery was led by FHA and VA parts of the market where American families had been frustrated for the longest period of time. In turn, research in housing contributed importantly to the economy's overall recovery during 1983. I think that is continuing as well so far in 1984.

Somewhat of a surprise to some analysts, residential real estate activity has started up in 1984 at an even stronger pace than 1983. The recent increase in mortgage rates has caused concern about the future course of the housing markets and is a potential problem that will only worsen if Congress and the administration fail to achieve significant reductions in the Federal budget deficit within the next few months.

However, given the current strong momentum in the housing real estate markets and the possibility that progress will be made in the budget debate, we believe credit budget limits of at least $50.9 billion for FHA and $68.25 billion for GNMA will be needed for fiscal year 1985.

At the same time, we would encourage both Congress and the administration to monitor activity under these programs to ensure that the limits do not become restrictive and arbitrarily restrain the volume of private funds available to homebuyers.

Specifically, in our formal statement, which we would like submitted for the record, we recommend that HUD be required to notify Congress at the earliest possible time that the ceilings could be reached in order for Congress to have time to react to avoid the possibility of shutting down these programs during periods of strong demand for FHA and VA financing in particular.

Of course, about 90 percent of the FHA and VA financing normally flows through the GNMA mortgage-backed securities program.

Further, MBA urges anti-impoundment language be included as part of the appropriations measure. The Secretary of HUD should be required to enter into FHA and GNMA commitments up to the limits established by Congress subject only to the shortfall of qualified requests. Anti-impoundment language will prevent the restriction of those programs by administrative action.

VETERANS ADMINISTRATION

With respect to the fiscal year 1985 appropriation for the VA, MBA urges the subcommittee to keep a watchful eye to ensure the VA home loan guaranty program is funded adequately. Both the Senate and House have acted within the past several weeks to increase the funding fee paid by veterans for a VA-guaranteed loan from the current one-half percent to a full 1 percent and, further—and I think this is important—directing that the fees will be credited to the home loan guaranty fund rather than toward general Treasury revenue.

Due to the recent recession, there had been a higher than normal foreclosure rate in homes. This has taken a toll on VA revolving fund. The increase in the funding fee and allocation of that fee to the revolving fund should help to relieve the problems that the fund faces.

The President's fiscal year 1985 budget, which was submitted on February 1, 1984, indicates that no appropriations would be required to operate the VA home loan guaranty program during fiscal year 1985. That budget proposal rested on an assumption that the VA would discontinue acquiring properties in satisfaction of guaranteed claims after default. This change from the traditional and successful way of operating the program was to have gone into effect on March 1 of this year.

Fortunately, the administration has not implemented the change which we believe would have been a serious mistake and harm to the VA program. Instead, the administration has decided the method of satisfying guaranteed claims ought to be studied by an interdepartmental task force.

In light of this change in the administration's plan, however, the fiscal year 1985 budget and appropriations for the VA home loan guaranty program need to be increased. MBA understands the Congressional Budget Office estimates that $128 million in appropriated funds would be needed to operate the program in fiscal year 1985 based on an assumption that the VA can otherwise support the program from nonappropriated sources as it has in recent years.

MBA urges that at least the CBO estimate of at least $128 million be provided.

In summary, we urge this subcommittee to maintain the credit budget levels for FHA and GNMA at $50.9 billion and $68.25 billion, respectively. Also, we would encourage the Congress to keep an eye on these programs throughout the year in order to assure the adequacy of the loan debts and request that anti-impoundment language be added to prevent restrictions on the program by administrative action.

With respect to the VA loan guaranty program, if the funding fee is increased, we strongly urge that be credited to the guaranty fund rather than the general treasury revenues.

Finally, MBA recommends that at least $128 million be appropriated over and above the revenues from the funding fees to support the VA loan guaranty program.

We appreciate the opportunity to be here, and I will be happy to answer any questions.

[The statement follows:]

STATEMENT OF DR. MARK J. RIEDY, EXECUTIVE VICE PRESIDENT, MORTGAGE BANKERS ASSOCIATION OF AMERICA

Mr. Chairman and Members of the Subcommittee, my name is Mark J. Riedy. I am Executive Vice President of the Mortgage Bankers Association of America.* MBA is the trade association of the Nations' mortgage banking and real estate finance industries. Accompanying me today are Burton C. Wood, MBA's Legislative Counsel, and Charles H. Fritts, MBA's Associate Legislative Counsel.

We appreciate the opportunity to appear before you today to testify on the appropriations for FY 1985 for the Department of Housing and Urban Development (HUD) and for the Veterans Administration (VA). Our comments will focus on the necessity for establishing sufficiently high credit budget limits for the non-subsidized, user-fee supported Federal Housing Administration (FHA) mortgage insurance and Government National Mortgage Association (GNMA) Mortgage-Backed Security (MBS) guaranty programs. Because the demand for home mortgage credit is interest rate sensitive, the performance of the economy in FY 1985 and Congress' ability to reduce the Federal deficit are relevant to the discussion of credit ceilings for FHA insurance and GNMA guaranties.

MBA would like to commend this Subcommittee and the Congress for the timely action taken to increase the FHA ceilings for FY 1983. It was necessary to do this twice in order to accommodate the high volume of activity that took place once interest rates decreased to more affordable levels and the housing recovery got underway. Not only did this action help buyers move back into the market quickly, but it also allowed many homeowners to refinance their high interest rate loans and to take advantage of lower, more affordable rates.

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*The Mortgage Bankers Association of America is a nationwide organization devoted exclusively to the field of mortgage and real estate finance. MBA's membership comprises mortgage originators, mortgage investors, and a variety of industry related firms. Mortgage banking firms, which make up the largest portion of the total membership, engage directly in originating, financing, selling, and servicing real estate investment portfolios. Members include:

- Mortgage Banking Companies
- Mortgage Insurance Companies
- Life Insurance Companies
- Commercial Banks
- Mutual Savings Banks
- Savings and Loan Associations
- Pension Funds
- Mortgage Brokers
- Title Companies
- State Housing Agencies
- Investment Bankers
- Real Estate Investment Trusts

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ECONOMIC OUTLOOK

As the three-year era of prolonged recession came to an end in late 1982, the housing sector of the economy played a key role in the economic recovery. Although mortgage loans insured by FHA backing securities guaranteed by GNMA represent only about 12 percent of the residential housing finance market, they traditionally play a very important countercyclical role. For example, in FY 1983, while conventional lending was up by 94 percent over 1982 volume, loans insured by FHA exploded by 140 percent. The availability of an adequate ceiling for FHA-insured and GNMA-guaranteed private lending helped many Americans either buy a needed home or refinance a high interest loan at a more affordable rate.

The recent growth in FHA and GNMA commitment activity illustrates the importance of these programs to the support of the private mortgage market during an economic upturn. During the recession of 1982, only $12.9 billion of FHA commitments were issued, while $36.4 billion of commitments were issued for GNMA securities. As FY 1983 unfolded, $44.6 in FHA commitments and $64.2 billion in GNMA commitments were needed in the residential finance markets. These FY 1983 levels represented gains of 140 percent for FHA commitments and 76 percent for GNMA commitments from the previous year.

During FY 1984, residential financing activity appears likely to be somewhat greater than in 1983. Although there is a concern that recent increases in interest rates, if they continue, could throw the housing sector and the whole economy into recession, we are hopeful that this outcome will not result. In recent days, Congress has made significant progress on bills that could reduce the federal budget deficit by as much as $182 billion over the next three years. We believe that this initiative would have somewhat of a favorable impact on long-term interest rates.

Such a development would lower mortgage rates, and it would help short-term rates fall as well. Housing starts, which reached 1.7 million in 1983, could reach 1.8 million during 1984, if sufficient FHA and GNMA financing commitment authority are available.

The success of the adjustable rate mortgage (ARM) over the past six months is a very important development in real estate finance. Because the FHA soon will begin insuring

ARMs, it is important that sufficient commitment authority be available to permit this new initiative to succeed.

If interest rates fall in response to the improved fiscal policy package currently being developed by this Congress, additional demand for refinancing existing mortgages at lower interest rates will also occur. This demand for refinancing will use up a portion of the available FHA and GNMA commitment authority as it did in 1983. It is important that there be sufficient FHA and GNMA commitment authority to accommodate such refinancings for two reasons. First, individual homeowners need to be able to reduce the portion of their income spent on housing and devote that income to saving, investment, or other uses of their choice. Second, lower monthly payments also reduce the risk of default, and such a lessening of risk benefits homebuyers, lenders, and the FHA and VA insurance and guaranty funds.

For FY 1985, the proposed FHA commitment ceiling of $50.9 billion is believed to be adequate at this time. The proposed GNMA commitment limit of $68.25 billion also is expected to be sufficient, even though these limits are unchanged from their FY 1984 levels. It will be important to monitor these programs, if and as the economic recovery continues, to ensure that the limits do not become restrictive and arbitrarily restrain the volume of private funds available to homebuyers.

MBA has consistently maintained that it is not necessary to place maximum credit limitations on the FHA mortgage insurance and the GNMA-MBS programs. Both programs are supported, in full, by user fees. In fact, both programs generate net revenues for the government. There is no need artificially to restrict these programs, which provide efficient access for FHA and VA loans to the private secondary mortgage market. However, in the event Congress decides to continue to place limits on the programs, MBA recommends that such ceilings should be set at least as high as those imposed in FY 1984, that is, $50.9 billion for FHA, and $68.25 billion for GNMA. The 1983 Housing Act (P.L. 98-181) sets the FHA and GNMA credit levels for FY 1984 and FY 1985 at $50.9 and $68.25, respectively. Further, the Administration's proposed HUD Budget calls for these same levels. While we certainly would support an increase in either program's ceiling, the current proposals appear adequate, especially in light of this Subcommittee's demonstrated willingness and ability to act quickly to raise the limits if it becomes necessary.

GOVERNMENT NATIONAL MORTGAGE ASSOCIATION

The GNMA-MBS program facilitates secondary mortgage market financing for mortgages insured by FHA, or guaranteed by the Veterans Administration (VA), but not conventional loans. Over 90 percent of FHA and VA loans are pooled into GNMA-MBSs. The GNMA-MBS activity provides what is called a secondary guaranty, because the Federal Government's potential liability is limited under the GNMA-MBS program by the fact that the Government also backs the underlying product, that is, through the primary loan insurance and guaranty programs—FHA and VA.

Under the MBS program, lenders package FHA/VA mortgages into "pools" and sell them in the capital markets to permanent investors. GNMA prescribes a standard format for the securities and guarantees the performance of the originator/issuer, who must pay investors in full each month, regardless of whether all funds have been received from homeowners. Although the GNMA-MBS is a guaranty program, in the 13 years of its existence, its fee income has always offset its expenses. It has not cost the government a single penny.

Because the GNMA-MBS is a secondary guaranty program, a restriction in the GNMA-MBS program restricts program activity in the underlying primary loan programs— the FHA insurance and VA guaranty programs. Essentially, GNMA provides a means for home-buyers, primarily moderate- to middle-income families and veterans, to obtain low-cost direct access to private mortgage financing via the secondary mortgage market.

In FY 1983, commitments issued in the GNMA-MBS program totaled $64.22 billion. This was perilously close to the $68.25 billion ceiling. We expect to see greater use of the GNMA-MBS program in future years, due to its widespread acceptance in the marketplace, and its critical value as a role model in fostering capital market innovations. Further, the level of purchases of VA and FHA loans by the Federal National Mortgage Association (FNMA), relative to its conventional mortgage purchases, has declined in recent years because the yields required by FNMA have been above yields prevailing in the GNMA market. As a result, the GNMA-MBS market has become even more important as a conduit for tapping private funds for investments in FHA and VA loans.

As we understand it, FNMA sets its required yield by calculating the expected prepayment rates for FHA and VA loans (which are slower than those for conventional loans due to the assumability of FHA and VA loans), and compares these yields with its cost of borrowing. The resulting required yields have caused FNMA's purchases of FHA/VA loans to fall dramatically, as indicated by the table below.

FNMA Purchases of FHA/VA Loans

	Volume (in millions of dollars)
1983	$ 141.0
1982	901.2
1981	2,284.0
1980	5,273.3

Formerly, FNMA provided a strong market alternative for FHA/VA loans. However, since that market has virtually dried up, the GNMA-MBS program should be given high enough ceilings to provide a sufficient supply of long-term, fixed-rate mortgage credit. While this does not necessarily indicate that FNMA will never again offer competitive yields for FHA and VA loans, it does underscore the importance of providing an adequate credit budget level for GNMA.

FEDERAL HOUSING ADMINISTRATION

In FY 1983, a credit ceiling of $39.8 billion was set originally for FHA insurance. During the year, when it appeared that the ceiling would have to be raised, Congress was able to respond quickly and increase the limit to $50.9 billion in the FY 1983 Supplemental Appropriations Act. The actual FY 1983 commitment level was $44.6 billion. There is a fallout factor between conditional commitments to insure and actual (firm) commitments, which result in insurance. For example, a potential borrower may fail to qualify or may switch to a conventional mortgage after initially applying for FHA conditional commitment. Therefore, a cushion is essential to cover this fallout, because the level is based on conditional activity not actual insurance written.

In FY 1984, as of February 29, FHA had committed to insure approximately $7.71 billion in home loans. This moderate level of activity can be attributed partly to the fact that the spring homebuying season had not yet begun and to the popularity of adjustable rate mortgages (ARMs) being offered by conventional leaders. FHA does not presently offer an ARM, although it is in the process of writing regulations to do so. Although we have some reservations about the legislative constraints on the FHA-ARM program, we expect that the FHA-ARM eventually will be a popular product. MBA recommends that the $50.9 billion level be maintained in order to avoid curtailing program activity when demand grows over the course of this year. We also support the higher level contained in the House Budget Resolution (H Con Res 280).

PROCEDURAL SAFEGUARDS

Notice of Program Activity Levels. In part due to the events in 1983 that required emergency action to accommodate higher FHA levels, MBA suggests that flexibility and procedural safeguards are an essential ingredient of the credit budget enforcement mechanism. The Senate HUD-Independent Agencies Appropriations Subcommittee's report on the FY 1983 HUD-Independent Agencies Appropriations Act (P.L. 97-272) contained precautionary language, in the event that the limits on the FHA and GNMA-MBS programs were approached. It stated that, "the Department (HUD) is directed to notify the Committee if it appears the limitation will require a moratorium on commitments." (See S. Rpt. 97-549, p. 17.) MBA supports the inclusion of stronger language in light of the Administration's past efforts to reduce these programs without Congressional consultation. Congress must be notified by HUD at the earliest possible time that the ceilings could be reached in order to take appropriate and timely action.

MBA suggests that the following legislative language would provide the appropriate notice without burdening the administrative agencies:

> "The Secretary shall notify Congress whenever the cumulative fiscal year commitments issued under the Federal Housing Administration

> mortgage insurance program or the Government National Mortgage Association Mortgage-Backed Security program exceed a pro-rata share of the total year-to-date commitment authority during any quarter of the fiscal year. However, no limitation is imposed, by virtue of this section, on the cumulative quarterly commitments authorized to be issued by the Federal Housing Administration or the Government National Mortgage Association, except pursuant to the total commitment limitations imposed by the Appropriations Act. This notification shall be made within 30 days after the end of any quarter affected by this provision."

This language would impose a duty on the HUD Secretary and the GNMA President to report to the Congress in a timely fashion whenever it appears that the commitments issued under the FHA mortgage insurance or the GNMA-MBS guaranty programs are being drawn down at such a rate as to pose the possible danger of reaching the program commitment ceilings. Prompt notification will enable Congress to react to avoid the possibility of program moratoria whenever it appears that commitments are being utilized at such a rate as to pose the possibility of running out of commitment authority before the end of the fiscal year. This section avoids imposing a blanket reporting requirement. A report is required only when it appears that program usage in any quarter, on a cumulative basis, is proceeding at such a pace that commitment authority could be exhausted. Both HUD and GNMA currently have tracking systems that provide this information. However, the proposed language also makes it clear that this is not an allocation scheme to ration commitments on a quarterly basis.

Anti-Impoundment Protections. Furthermore, MBA urges that anti-impoundment language be included as part of the appropriations measure. The Continuing Resolution for FY 1983, as well as the Continuing Resolution for FY 1984 (P.L. 98-151), provided that:

> "Notwithstanding any other provision of this joint resolution, the head of any department or agency of the Federal Government in carrying out any loan guarantee or insurance program shall enter into commitments to guarantee or insure loans pursuant to such program in the full amount provided by law subject only to (1) the availability of qualified

applicants for such guarantee or insurance, and (2) limitations contained in appropriations acts."

The 1983 Housing Act, with regard to FHA and GNMA credit levels, requires the HUD Secretary to enter into commitments up to the limits subject only to the absence of qualified requests.

This expresses a clear and incontrovertible intention on the part of Congress to set limits that cannot be reduced by administrative directive. MBA urges that similar language be included in the FY 1985 HUD-Independent Agencies Appropriations bill and in any Continuing Resolution, if such a measure becomes necessary.

VETERANS ADMINISTRATION

With regard to the FY 1985 appropriation for the Veterans Administration (VA), MBA urges the Subcommittee to keep a watchful eye to ensure that the VA home loan guaranty program is adequately funded.

Both the Senate and the House have acted within the past several weeks to provide funds for the operation of the guaranty program. However, it is not clear that this action will be adequate to assure the program's continued availability to eligible veterans as an entitlement program. On March 30, 1984, the Senate passed S 2391, a bill introduced by Veterans' Affairs Committee Chairman Simpson and Ranking Minority Member Cranston, which would increase the "funding fee" paid by veterans for a VA guaranty from the current one-half percent to a full one percent, and further, directing that the fee would be credited to the VA Home Loan Guaranty Fund, rather than toward general Treasury Revenues. On April 12, as part of the Budget Reconciliation Act, HR 5394, the House also adopted statutory changes that would increase the funding fee to one percent and direct it to the fund which supports the VA home loan guaranty program. MBA recommended that, if a fee is imposed, that the fee be dedicated to the VA revolving fund.

Due to the recent recession there has been a higher than normal foreclosure rate in all home loans. This took a toll on the VA revolving fund. The increase in the funding fee and the allocation of it to the fund should help to relieve the problems the fund faces.

The President's FY 1985 Budget, submitted to the Congress on February 1, 1984, indicates that no appropriations would be required to operate the VA home loan guaranty program during FY 1985. However, that budget proposal rested upon an assumption that the VA would discontinue acquiring properties in satisfaction of guaranty claims after default. This change from the traditional and successful way of operating the program was to have gone into effect on March 1, 1984. However, the Administration has not implemented the change, and has stated that the method of satisfying guaranty claims will be studied by an inter-departmental task force.

The budget and appropriations for the VA home loan guaranty programs FY 1985 should not be based upon a proposed change that has been withdrawn for further study. MBA understands that the Congressional Budget Office (CBO) estimates that $128 million in appropriated funds would be needed to operate the program in FY 1985, based on an assumption that the VA can otherwise support the program from non-appropriated sources as it has in recent years. MBA urges that at least the CBO estimate of $128 million be provided.

RENTAL HOUSING REHABILITATION AND DEVELOPMENT PROGRAM

Section 301 of the 1983 Housing Act (P.L. 98-181) created a rental rehabilitation and development grant program. The rehabilitation grants under the program provide for 50 percent matching of state and local government efforts to rehabilitate privately owned residential property. These grants can only be used in neighborhoods where the median income does not exceed 80 percent of the area's median income.

The rental development grants also require at least a 50 percent matching of funds by the state or locality. Projects funded under this program must allocate at least 20 percent of the units to families at or below 80 percent of the median income of the area.

The House of Representatives passed H.J. Res 517, the "Urgent Supplemental Appropriation for Department of Housing and Urban Development, 1984." It appropriates $615 million for this program over a two-year period, FY 1984 and FY 1985.

MBA urges the Subcommittee to provide for adequate funding for this low-income hosuing production program.

CONCLUSION

The FHA mortgage insurance and GNMA-MBS guaranty programs rely solely on private mortgage credit. The private lender, not the Federal government, is responsible for marketing the GNMA securities to investors. The Government's role as an insurer or guarantor improves the marketability of the mortgage pools, expedites access to the secondary market, and thereby assures the availability of highly competitive mortgage capital at affordable rates to moderate- and middle-income families and veterans.

The real issue involved in FHA and GNMA ceilings is whether the Federal government intends to maintain its commitment to housing and mortgage finance by continuing programs that enhance the availability of adequate supplies of mortgage credit, especially for moderate- and middle-income families, first-time homebuyers, and veteran homebuyers. The Federal government, long ago, recognized the social need for, and importance of, housing its citizens and homeownership, and responded in an appropriate manner by creating programs to fulfill this social goal. Not only have the non-subsidized FHA insurance and GNMA-MBS guaranty programs worked efficiently, but they have been profitable for the govenment while utilizing private rather than governmental sources of mortgage credit.

They have achieved a remarkable success in serving as models of innovation and in structuring a mortgage finance delivery system that provides readily available sources of mortgage credit and helps to stabilize the flows of mortgage credit throughout all phases of interest rate cycles. Importantly, these programs involve private sector lenders and investors to a maximum degree.

The real benefits enjoyed under these programs are the capital market efficiency of the GNMA security, and the standardization offered by the underlying FHA and VA loan instruments. The non-subsidized FHA mortgage insurance programs provide a source of private mortgage credit for low-downpayment loans to homebuyers. The GNMA-MBS program ensures lenders of ready placement in the secondary market for FHA and VA loans. In effect, the existence of the GNMA-MBS program allows the individual consumer the same access to the credit markets as large corporate borrowers.

The future of the mortgage finance delivery system is uncertain. Fundamental changes in the powers of all financial institutions are being implemented pursuant to the Garn-St Germain Depository Institutions Act of 1982, (P.L. 97-320). Further charges are under consideration by the House and Senate Banking Committees. Those changes will undoubtedly alter the roles of many institutions that previously have been deeply involved in mortgage finance. As the role of traditional mortgage finance institutions as a predominant sources of mortgage credit is altered, the pivotal importance of the secondary mortgage market will increase, because of its ability to attract adequate supplies of mortgage credit from non-traditional, as well as traditional, investors.

Not only is the role of primary lending undergoing radical change, but the very nature of the mortgage is being altered. With the inflationary atmosphere and volatile interest rates of the recent past, investors are less willing to lock their funds into long-term, fixed-rate instruments. The proliferation of creative mortgage financing techniques in the conventional market inhibits standardization of the underlying mortgage instruments—a feature that is essential whenever loans are to be pooled and sold in packages as securities in the secondary mortgage market.

Recently, we have seen a tremendous growth in the use of ARMs. More than 50 percent of home mortgage loans made thus far in 1984 have been ARMs. This situation is going to make the average U.S. citizen more sensitive to problems, such as high interest rates, that result from the massive Federal deficit. Unless Congress acts quickly to cure the deficit, interest rates will continue to creep upward. The new factor in the formula is that homebuyers with ARMs will pay more and more each year on their mortgages.

Prior to the ARM, once a homebuyer bought under a 30-year fixed rate loan, he or she was insulated from the effect of the deficit on mortgage interest rates as long as he or she stayed in that house. The ARM will sensitize an increasing portion of homebuyers to the adverse effects of excessive Federal deficits, which, in turn, will sensitize Congress.

The GNMA-MBS is one of the most significant and successful mechanisms ever devised for attracting capital for mortgage investments. MBA believes that the continued strength of the GNMA-MBS program will assist rather than impede the development of a viable conventional MBS market, because trading in the GNMA-MBS serves to establish a benchmark for the pricing of these conventional instruments, as well as serving as a model for the development of conventional MBSs in a market that is currently undergoing radical change.

In summary, the actuarially sound FHA mortgage insurance program and the GNMA-MBS guaranty program were created to foster support for homeownership and assure access to the credit markets. These programs have been remarkably successful at achieving these goals, at no cost to the Treasury. The FHA and GNMA-MBS programs will help to address those needs efficiently, unless credit budget ceilings restrict their operations.

MBA urges this Subcommittee to maintain the credit budget levels for FHA and GNMA at $50.9 billion and $68.25 billion, respectively, and to keep an eye on these programs throughout the year to insure that access to them is not restricted by the ceilings or by Administrative action. Similarly, MBA urges this subcommittee to appropriate at least $128 million to operate the VA home loan guaranty program in FY 1985.

MBA appreciates the opportunity to testify before this Subcommittee, and would be happy to answer questions or provide additional material upon request.

Senator GARN. Thank you, Mr. Riedy. I see for the first time in several years you are satisfied with the FHA's commitment ceiling and GNMA commitment limit.

Mr. RIEDY. It is nice for a change.

Senator GARN. On the other hand, you did request bill language change that the Director had to notify the committee. Do you feel the current language in effect has not performed as it should?

Mr. RIEDY. Burton Wood.

Mr. WOOD. We feel it has been. We are concerned, given the past history, the Department once upon a time did try administratively to restrict the program. We would like to keep that in there as a warning to them.

Senator GARN. Just a tweeker.

Mr. RIEDY. A little security device.

Senator GARN. If we put it in, we have to make sure they read it. Thank you very much. We appreciate your willingness to testify.

Mr. RIEDY. Thank you, Senator.

Senator GARN. Is Donald Schwab here? Is Mr. Stephen Edmiston here? John F. Sherman? Lloyd Thorndyke? Joseph Zoldan? I guess they just weren't interested in listening to everybody else's testimony to be here early. Is there anyone here who is scheduled to testify some time later?

Senator Sarbanes is walking in.

Why don't you sit down and be comfortable while you wait for him, and we will both be comfortable while we wait.

[A brief recess was taken.]

Senator GARN. The subcommittee will reconvene.

I am very pleased and honored to have two of my distinguished colleagues, the entire Senate delegation from the State of Maryland, before the subcommittee—Senator McC. Mathias who used to be ranking minority member of this subcommittee, and if he had not chosen to go to greener pastures, he would have been sitting here listening to himself testify. He would have been chairman of the subcommittee. And Senator Sarbanes, I have the privilege of having him as a fellow member of the Senate Banking Committee with me.

Gentlemen, I am happy to have both of you before the subcommittee today.

Senator Mathias, if you would like to begin.

STATEMENT OF HON. CHARLES McC. MATHIAS, U.S. SENATOR FROM MARYLAND

Senator MATHIAS. Thank you, Mr. Chairman. It is a great pleasure to return to this subcommittee. I feel, knowing the caliber of the committee and the caliber of the committee staff, the case Senator Sarbanes and I will make today will fall upon friendly ears.

I want to speak briefly about the Baltimore Veterans Administration replacement hospital because the construction of a replacement hospital in Baltimore is urgently needed if we are to keep faith with the veterans and equally importantly, if we are to meet changing medical needs.

This is not just a straight-line projection, but medical science is changing, the delivery of health care is changing, and there is a compelling need for this new facility. If you will bear with me, I will just outline very briefly some of the reasons that this is so.

As even you and I, Mr. Chairman, are beginning to realize, the veteran population is beginning to age. I have become more and more aware of it as time goes on. In 1981, the number of veterans age 65 and over was 3.5 million, and that number is expected to increase to 7.7 million in 1990 and to 9 million in the year 2000. This isn't a speculation. These are people who are alive and breathing and in existence. This is just recognition of actual facts.

In addition, from 1990 to the year 2010, a majority of all males in this country over age 65 will be eligible for VA health care benefits under current policy. Since the over-65 population, as a group, is the largest per capita consumer of medical care, it is imperative that the VA be prepared to expand its capabilities sufficiently to meet the health care needs of these citizens.

Currently, there are 629,000 veterans in the State of Maryland. Nearly one-quarter of that number live in Baltimore. Half of them will be over 60 years old this year. So the need for medical care and modern, efficient medical facilities becomes more urgent on a daily basis. Each day that goes by, the need gets more urgent.

Over 70 percent of the veterans hospitalized at Loch Raven Hospital have no health insurance, have no hope of any health care outside the veterans' system.

In the Maryland VA hospitals that serve the chronically ill, there are waiting lists for admission, and we are at the point that we have to face up to this growing problem and deal with it. This is not a question of surplus beds or surplus facilities; there is a waiting list.

Our veterans are finding it increasingly difficult to gain admission to the hospitals that do exist, archaic as they are in many of their aspects. Some veterans are somewhat more fortunate than others. Ours are in at least one respect. Despite the overcrowded facilities and the over-aged facilities, through herculean efforts on the part of the medical staff of the University of Maryland, we have been able to maintain high-quality care at an affordable cost.

Study after study has shown that medical care provided by veterans hospitals in Maryland is uniformly cheaper and of equal or better quality than that available in the private sector, but there is a limit to what can be done. The facilities are inadequate—hopelessly inadequate—and from the cost-benefit point of view, really unsalvageable.

The Loch Raven Hospital, originally designed as a tuberculosis hospital within the VA system, is now over 30 years old. Shortly after its completion, with the advent of drug therapy for tuberculosis, attempts were made to convert it into an acute care hospital, but the design elements, which were used to serve its intended purpose, have prevented making that conversion effective.

The Loch Raven Hospital can best serve the veterans by being returned to the use for which it was designed, which is an extended-care facility. Simply put, there is no room for expansion at Loch Raven. Some staff members of the subcommittee have been to Baltimore and have seen for themselves the serious deterioration and outdated design of the structure, but I feel that a few of the stark examples of the inadequacies of the hospital will underscore the need to address these problems and will convince you of the need to act now.

Just for example, Loch Raven completely lacks contemporary high technology, diagnostic, and therapeutic equipment for acute medical services. Acquiring modern technology has been delayed for the last 10 years in anticipation of the construction of the replacement hospital facility. In fact, there is no CAT scanner in any of the three Maryland veterans hospitals, necessitating the transfer of some patients, some of them in critical condition, to the university hospital for diagnostic services.

Loch Raven has extensive safety code violations that will require several million dollars to correct to meet accreditation standards. The outpatient facility is separately staffed by nonmedical school affiliated hospitals and located in the Federal office building at Hopkins Plaza. This means there is little or no continuity of care received by the veteran Baltimore population once they have been referred to the Veteran Administration Medical Center as inpatients.

Of course, the new hospital would correct that. The Loch Raven Hospital has only two operating rooms to serve 100 surgical patients daily, both infectious and noninfectious cases. Loch Raven is located in a quiet residential section of the city with no room for expansion. It is inaccessible to public transportation and there is simply no possibility of providing adequate parking.

The blood bank has been disaccredited which could lead to disaccreditation of its labs and also to disaccreditation of the hospital itself by the Joint Commission on Accreditation of Hospitals.

The question has arisen about surplus hospital beds in the Baltimore area. That question and the question of whether the construction of a new facility will make this problem worse has been discussed and the facts do not justify this concern. There are only 292 acute care beds in the Baltimore area. If there is any surplus of hospital beds in the Baltimore area, they are in services not found in VA hospitals; that is, pediatrics, obstetrics, and gynecology.

The replacement VA hospital, as planned, will not increase the number of surgical medical beds. In fact, it will reduce that number marginally. What will be increased and what should be increased and what needs to be increased are extended care and rehabilitation beds.

As the population grows older, this kind of care will become more and more prevalent. Soon we will have a severe shortage of these beds and it is imperative that the problem be faced and faced now.

In closing, I want to touch on another important aspect of this proposed facility. The plan calls for the replacement hospital to be constructed adjacent to and physically connected with the University of Maryland Hospital. The juxtaposition of these two institutions would allow us to realize important savings in medical care costs. The two institutions would share personnel and services, such as CAT scanners, radiation therapy, renal dialysis, cardiac surgery, and sophisticated laboratory techniques. The impact on the quality of care that the availability of the faculty of the University of Maryland Schools of Medicine, Nursing, Pharmacy, Dentistry, and Social Work will have is really incalculable.

So as you consider this important appropriation request for $111 million, I hope that you will bear in mind that the medical needs of our veterans are not going to go away. On the contrary, they will increase daily. Similarly, the cost of construction for facilities to meet these needs will also increase daily. There is no possible economy in delay. There is no possible justification for not finally fulfilling our commitment to American veterans which traces all the way back to 1977 when Congress appropriated $8.5 million for site acquisition and for design of the new medical center.

I hope, Mr. Chairman, that this appropriation will be favorably acted upon by the committee.

Senator GARN. Thank you, Senator.

Senator Sarbanes.

STATEMENT OF HON. PAUL S. SARBANES, U.S. SENATOR FROM MARYLAND

PREPARED STATEMENT

Senator SARBANES. Thank you very much, Mr. Chairman. Mr. Chairman, I have submitted my statement and if it could be included in the record, I will summarize it and add some points to those.

Senator GARN. By unanimous consent, it will be. I don't object and I am the only one here, so it will be included.

[The statement follows:]

STATEMENT OF SENATOR PAUL S. SARBANES

Mr. Chairman, I greatly appreciate the opportunity to appear before the subcommittee as it considers the fiscal year 1985 appropriations for the Veterans Administration's hospital construction program. My intention is to once again reaffirm my strong support for the funding of the new Veterans Administration medical center (VAMC) in Baltimore and to request the members of the HUD-Independent Agencies Subcommittee and the full Appropriations Committee to provide the long-overdue and much-needed construction money for this vital project.

As I am sure the members of this subcommittee already know, the new Baltimore medical center has been in the planning process since 1966 and the Congress has already authorized and appropriated some $9 million for the purchase of the hospital site and the necessary architectural and engineering design work for this facility. I am convinced that any further delays in completing this essential medical care facility would be fiscally imprudent and would contribute to increased construction costs later. I am even more concerned that continued delay will deprive the more than 300,000 veterans residing in the Baltimore primary service area of the timely, high-quality medical care they deserve.

I would like to briefly underscore the pressing need for the medical center. There are currently three aging VA hospitals serving veterans in the Baltimore service area—Loch Raven, Fort Howard, and Perry Point. The present Baltimore Veterans Administration Hospital at Loch Raven was constructed in 1952 as a tuberculosis hospital and lacks the modern diagnostic and therapeutic facilities necessary for complete general and acute medical care. The Fort Howard hospital was built in 1942 and Perry Point dates from 1922. Each is similarly ill designed or equipped for primary care. This situation results in the constant transfer of patients, frequently in critical condition, to area hospitals for diagnostic evaluation. According to the VA, the Perry Point, Fort Howard, and Loch Raven sites are now constrained by numerous physical, functional, and space difficulties. None of the sites can be adequately expanded or upgraded without incurring prohibitive costs, both in terms of dollars and in interruption of care. There is no question that Perry Point, Loch Raven, and Fort Howard can and should be adapted to continue providing the type of care to which they are well suited, particularly long-term and outpatient care. The fact is, however, that these centers are hard pressed to provide quality, primary care for those veterans now in the Baltimore service area. They will be hopelessly inadequate to deal with the sizeable projected increases in the number of older veterans, 45 percent of whom will be 60 years or older this year. These veterans are entitled to and expect to rely heavily upon VA medical facilities.

The new downtown Baltimore hospital will adequately address these problems. Designed to satisfy the criteria outlined in the National Academy of Sciences "Study of Health Care for American Veterans," the downtown hospital will be able to meet the urgent needs of the current and projected veteran population. The hospital will also operate in conjunction with the University of Maryland Hospital under a unique program of cooperative medical care which will provide significant savings through the sharing of equipment, staff, and services and will ensure that patients have access to some of the best medical talent in the country. Most importantly, the hospital will be configured to emphasize acute medical and surgical care and specialty outpatient services in response to indications of changing needs for medical care in the service area population.

This project enjoys the strong support of the State of Maryland, the city of Baltimore, the University of Maryland Medical Center, and the Association of American Medical Colleges. It was recommended for fiscal year 1985 funding by the 5-year medical facility construction needs assessment compiled by the Veterans Administration Department of Medicine and Survery. The new hospital will correct serious existing deficiencies in the delivery of care to veterans within the Baltimore service area. It offers veterans the prospect of not only adequate, but innovative care at a reasonable cost to the Government. By their service, these veterans have earned decent medical care and we have made a start in coming up with a good plan for delivering that care. In my view, we ought follow through on this undertaking to provide quality primary care to our veterans.

In light of the great need for this important new medical facility, the continuing strong State, local, and congressional support, and the funding already extended by the Federal Government, I urge the committee to provide the full $111 million in appropriations for this project.

Senator SARBANES. I will add some comments to those made by my able and distinguished colleague, Senator Mathias. We appreciate very much the opportunity to place on the record some important arguments with respect to some of the matters we feel should be included in this legislation.

We think we have had a very good and effective veterans medical care system in the State of Maryland. It is reflective of the efforts of a great number of people and the involvement of many, including the veterans organizations and their auxiliaries. One of the things that is particularly noteable in our State is the amount of volunteer work that has been contributed to the VA hospital system by these groups; they add a dimension to the quality of care which I think is very important over and above that provided at an effective level by the staff.

The population projections which Senator Mathias has laid before you are absolutely correct. As we look at where the numbers are going, obviously there is growing need for certain kinds of care. We have facilities in Maryland that fall short when you consider modern medical technology and the need for acute medical care, and it is that need that this hospital is designed to address.

The prospect of upgrading or altering the existing facilities to cover this problem has been carefully examined. That is not cost effective. It is very clear to go down that path would involve large amounts of money and would not provide a comparable standard for these facilities.

This project has a particularly unique aspect which I want to underscore. That is its location and its respective affiliation with the University of Maryland Medical School and with the medical complex of the university located in the city of Baltimore. The hospital, in fact, would be built adjacent to the medical school. It would be able to share its facilities with those of the medical school and the existing university hospital, thereby eliminating the necessity to duplicate a wide range of sophisticated medical technologies resulting in very important savings.

The prospect, as you look into the future, is for the enhancement of those savings. It would provide a close liaison with a first-class medical facility and assure the patients in the VA hospital of the highest standard of care. That was very carefully worked out in earlier years when the planning and location of this facility was under consideration. I think it is a very important, positive aspect to this particular project.

In every independent objective evaluation that has been made of VA hospital needs, this facility consistently ranks high on the list with respect to both the desire of the Veterans Administration and the need for such a facility. A fair amount of money has already been spent in design, site acquisition, and planning. In fact, we are ready to go right to construction if we can obtain the funds in order to do that.

The VA medical system in Maryland is a good one and has proven to be effective in addressing the health needs of our veterans. It is, however, falling behind in terms of medical technology, particularly in those areas which are reflected in the changing veterans population, a change we must now begin to address anew.

This facility would enable us to come back to a high standard of quality and innovative care. We know the pressures that are on the committee, but we think here we have an instance in which any cost-effective analysis comes down on the side of this facility. Once you examine what the alternatives are, you invariably come back to the conclusion that it makes good sense to go forward with the construction of this facility.

We would hope that the committee, viewing this hospital from that perspective, would find it possible to include the money in this legislation so that we may move forward on this very badly needed and very important new hospital facility. Thank you.

Senator GARN. Thank you, Senator. Let me respond in this way, and I am sure, McC, having been on this subcommittee, you know exactly what I am talking about. The real problem of veterans in the Baltimore area or across the country isn't so much the lack of resources as the inability of the VA to prioritize its medical care needs on a nationwide basis. The whole time I have been chairman of this subcommittee, one of my major goals has been to get the VA to prioritize its construction needs. I know that there are existing facilities in some areas that are underutilized and facilities, like yours, which require significant improvements. As you said, my staff has visited the hospital within the last 2 weeks and agree with your assessment of Loch Raven, agree with you completely.

This problem of getting the VA to set objective priorities has been frustrating to me for 3 years. In fact, when I first brought it up, discussed it on the floor of the Senate in this appropriations bill, I got in a great deal of trouble. I got very nasty letters, particularly from my veteran friends at home. I am a card-carrying member of the VFW, my hair follicles are aging rapidly, and at this time I am becoming part of the older veterans population. I don't think they understood what I was saying and talking about.

I was not criticizing an individual veteran; I was criticizing the Veterans Administration for what I consider a great deal of waste of funds by not prioritizing and going to the areas where the real need was, and that is still our great problem. After 3 years, I have not been able to get them to come up with a plan. Whatever the reason is, whether there are some of our colleagues that are more politically powerful in areas, whether the need is there or not, maybe that is part of it. I think it should be made totally on the basis of demonstrated need, not on the basis of who represents a particular area or what political party they belong to. But I have failed in 3 years to get them to come up with that kind of priority list, even on a nationwide basis.

So when it comes to Baltimore, I tried to get data—how does Baltimore compare on a nationwide basis—I can't get it because they don't have it; they don't really know because they haven't sat down and tried to do it.

So I am certainly sympathetic to your problem and my staff report agrees with your testimony today. The problem is, VA did request this. OMB took it out. As far as I can research, the subcommittee has never put in an entire project like this where there has not been a request for it. That presents me with some difficulties.

I would simply say that I, as chairman of the subcommittee, will take it up with the VA and OMB and see if it is possible for me to get it flowing in the right direction. It would certainly make it much easier to do if I had a request rather than trying to initiate it here in the subcommittee, which has never been successful before. I would certainly be happy to do that. I will talk to OMB and I will talk to the VA.

Senator MATHIAS. Mr. Chairman, your own distinguished military record makes it clear where your heart is on this matter, and we don't have any doubt of your personal sympathy for this. We would like to make your job as easy as possible. What you have just said suggests one further area of information that we might provide that would make it helpful.

Senator Sarbanes and I can join together—I am sure he would be willing to do that—and see what demographic studies we can get nationwide which would show where these pressures are. If VA won't do it, we will undertake that. I think maybe Paul and I, dealing with the Library of Congress and other sources, can put together some of that information which will help to make a natural priority.

I am willing to take our chances on just how the figures fall, I am so convinced this is a meritorious——

Senator GARN. Any factual data you can provide me obviously will be very helpful.

Senator SARBANES. Mr. Chairman, we appreciate your willingness to send the staff up there to examine the situation themselves. We welcome that. We have been at this a long time. As I said earlier, we feel by any objective measure in terms of what is needed, what the costs are, how it can be accomplished, what we are seeking, makes eminently good sense in every respect. It represents good action in terms of costs; it represents quality care; and we would be happy to work with you in any way we can.

Senator GARN. Paul, I am so fair I even had the Veterans Administration hospital in Salt Lake City investigated for some real boondoggles that went on out there. I had an IG inspection which showed that there was one heck of a lot of money wasted on some additions to that hospital. That is the kind of thing I am talking about. It would have been better to have not wasted some of that money in Salt Lake City and spent it in Baltimore. I say that as a representative of Utah.

When some of the veterans think I am after them, no, I am against bureaucracy wasting money that should be used for programs and health care and things of that nature.

I appreciate you coming.

Senator MATHIAS. Thank you very much, Mr. Chairman.

STATEMENT OF DONALD H. SCHWAB, DIRECTOR, NATIONAL LEGISLATIVE SERVICE, VETERANS OF FOREIGN WARS OF THE UNITED STATES

Senator GARN. Next, if we could have Donald Schwab, director of the National Legislative Service, Veterans of Foreign Wars of the United States.

Mr. Schwab, we are happy to have you before us today.

Mr. SCHWAB. Thank you, Mr. Chairman, and thank you for the privilege of appearing before this distinguished subcommittee. I will summarize my testimony with the understanding the entire testimony will be made a matter of the record.

Senator GARN. Yes, it certainly will be.

Mr. SCHWAB. Mr. Chairman, the concerns of Veterans of Foreign Wars are those in the area where no funding or underfunding is anticipated for the Veterans Administration. However, many of our concerns would be ameliorated if the additional funding requested by the Veterans Affairs Committee report to the Budget Committee are approved.

Our particular concern to us is the medical care budget which the Administrator admitted in another hearing was a detrimental budget. Increased funding has been requested by the chairman of the Veterans Affairs Committee of the Senate and we do support this additional funding.

Also, Mr. Chairman, the number covered in the Senate Veterans Affairs Committee report to the Budget Committee for outpatient care has been capped at $18 million for a number of years, and the Veterans Administration anticipates that 23 million visits by the year 1990, and we support the proper funding for those number of visits. I cover that in detail in my testimony.

We were very disappointed the President's proposed budget contained no funding for the Emergency Veterans Job Training Act of 1983. We do appreciate the commitment you made to Senator Alan Cranston with respect to funding being available if it was found to be needed for the fiscal year 1985 for jobs program.

I might mention, since I prepared my testimony, the money expended in this program so far has gone from $18 million to $20.9 million so far.

Mr. Chairman, we also support funding for the Veterans Administration replacement medical center in Baltimore. There has been $8 million expended there already, as you know. In addition, $1 million has been expended in Philadelphia for a nursing home care unit and outpatient expansion. We certainly would like to see this program funded because the city of Philadelphia has donated 12 acres of land for this purpose, provided the construction starts by December 1986.

Mr. Chairman, we are disturbed by the administration's proposal to terminate property acquisitions by the Veterans Administration following foreclosures on home loans. It is the opinion of many that if this proposal, which is in the President's budget and is part of the Grace Commission report, is adopted, it will hold the VA loan program primarily to Vietnam-era veterans. Mr. Chairman, we support an appropriate cost of living and compensation of VIC programs and also for those availing themselves of educational benefits under the GI bill.

The President's proposed budget recommended a 15-percent increase, and we support this. It has been several years since there was an increased in this area.

Mr. Chairman, in a matter not pertaining to the Veterans Administration appropriation, but coming within the purview of this subcommittee, is funding for a permanent visitors center at Arlington Cemetary. The VFW supports the appropriate funding for this purpose.

In conclusion, let me say the VFW appreciates the efforts of this subcommittee over the years and the consideration you have given to our concerns, and I thank you.

Senator GARN. Thank you, Mr. Schwab. I am sure you were here when I was talking about the Baltimore hospital. I will just add a little bit of detail to what I said to my colleagues, in trying to get a prioritization of fiscal year 1985 construction projects, the VA did provide me a ranking of 54 projects. The No. 1 priority on their list was to add two stories to the proposed parking garage in San Francisco. This apparently is more important to the VA than major modernization projects in another city.

So I would simply request that the VFW work with the subcommittee and, more particularly, with the VA, to try and convince them to develop a realistic priority listing for construction projects around the country. Maybe parking is terribly important in San Francisco, but it seems to me there might be higher priorities than more parking facilities around the country.

Mr. SCHWAB. Yes, sir.

Senator GARN. I would also suggest to you, you mentioned the job training program, and you are probably aware, I did add an amendment last year that added $150 million over 1984 and 1985 to be utilized during those 2 years for job training.

Mr. SCHWAB. Yes, sir, I appreciate that.

Senator GARN. Thank you very much. I appreciate your willingness to testify.

[The statement follows:]

STATEMENT OF DONALD H. SCHWAB, DIRECTOR, NATIONAL LEGISLATIVE SERVICE, VETERANS OF FOREIGN WARS OF THE UNITED STATES

Thank you for the privilege of appearing before this distinguished Subcommittee to present the views of the Veterans of Foreign Wars of the United States.

My name is Donald H. Schwab, and it is my privilege to serve the more than 1.97 million men and women of the Veterans of Foreign Wars as their National Legislative Director.

Mr. Chairman, as of this writing, a budget for the Veterans Administration has not been established. The President recommended $27.245 billion in budget authority and $26.694 in outlays. S. Con Res. 106 reported by the Senate Budget Committee at $26.800 billion in budget authority and $26.200 billion in outlays, is $445 million less than the President's request in budget authority, $494 million less in outlays and, respectively, $599 million and $506 million less than the Senate Veterans' Affairs Committee's request.

Mr. Chairman, the concerns of the VFW are in those areas wherein no funding or underfunding is anticipated. Many of our concerns would be ameliorated if the additional funding requested by the Veterans' Affairs Committee in its report to the Budget Committee is approved and appropriated.

Mr. Chairman, the medical care budget at $8.6 billion is a straight line budget and has remained so since 1975 when adjusted to the Consumer Price Index. Since 1975, the Veterans Administration's portion of the Federal budget in outlays for health care has fallen from 12.5 percent to an estimated 8.6 percent. Accentuating our misgivings in this area, the following is quoted from the President's proposed budget for the fiscal year 1985, " . . . if overall veterans budget costs are to be reduced in future years, a thorough reappraisal of veterans health care system policy, hospital capacity, and operational methods will be necessary. These issues will be subject to intensive scrutiny by the administration in preparation for the 1986 budget." Elsewhere in the budget appears the statement, "That no additional discretionary program commitments beyond those embodied in the 1984 budget baseline will be undertaken during the remainder of the decade unless existing programs of equal cost are eliminated."

Mr. Chairman, the Veterans' Affairs Committee has requested an additional $35 million to improve certain veterans health care programs. Specifically, $27.2 million and 697 additional FTEE for increased staffing in mental health services and $7.8 million and 245 FTEE to convert approximately 12 additional hospitals to the unit dose system of dispensing drugs to patients. The requested increase in mental health care personnel is necessary to increase the staff-to-patient ration in Veterans Administration psychiatric facilities, improve the VA's ability to treat veterans suffering from post-traumatic-stress disorder (PTSD) and for the treatment and rehabilitation of veterans with alcohol dependence and alcohol abuse related disorders.

In addition, Mr. Chairman, the Veterans' Affairs Committee recommended that $7.2 million requested for the readjustment counseling program for Vietnam Era veterans be reprogrammed from support of contract/fee arrangements to support an additional 220 FTEE for the program itself. Included is the stipulation that the great majority of these additional staff should not be for career appointments.

Mr. Chairman, an area of concern to the VFW, and not addressed by the Veterans' Affairs Committee, is the underfunding and understaffing of Veterans Administration outpatient facilities. For a number of years, 18 million outpatient visits have been programmed and the VA anticipates the demand will increase to 23 million by 1990. To attain the capability required in the next five years, the VFW concurs in the recommendation of the House Veterans' Affairs Committee that $50 million be functionally transferred from the working reserve of the construction account to fund 1,000 additional FTEE for outpatient services.

As is a matter of record, Mr. Chairman, the President signed H.R. 2355, as amended, the "Emergency Veterans' Job Training Act of 1983," on August 15, 1983, at our VFW National Convention in New Orleans, Louisiana, and it became Public Law 98-77. Funding was to be in the amount of $150 million in the fiscal year 1984 and an additional $150 million in the fiscal year 1985 to assist some 50,000 Vietnam Era and Korean veterans who have been unemployed 15 of 20 weeks immediately preceding the date of a veteran's application for participation in the program.

Mr. Chairman, first funding for this program in the amount of $75 million was contained in the "Continuing Appropriation, 1984," Public Law 98-151, approved November 14, 1983. The additional $75 million for the fiscal year 1984 was provided in the "Supplemental Appropriation, 1984," Public Law 98-181, approved November 30, 1983. However, $20 million was immediately transferred to readjustment benefits for educational assistance leaving $130 million for job training. Then to our complete amazement, the President's proposed budget for the fiscal year 1985, submitted to Congress in January, contained no funding for Public Law 98-77, "Because of an expected improvement in the economy resulting in lower unemployment among Vietnam Era and Korean Conflict veterans, the initial funds provided for this program will be sufficient to meet the objectives established for the 'Emergency Veterans' Job Training Act of 1983.' An appropriation will, therefore, not be required."

Mr. Chairman, veterans' unemployment continues to be unacceptably high. According to the Bureau of Labor Statistics, during January 1984, more than 571,000 Vietnam Era veterans were unemployed and 207,000 of these had been out of work 15 weeks or longer. The total of eligibles for this program is much higher since the Bureau of Labor Statistics does not compute information on Korean veterans as a group.

Mr. Chairman, according to figures furnished by the Veterans Administration, which has approval authority under this program, as of April 16, 1984, 145,062 veterans have applied for training under the provisions of Public Law 98-77 and 107,118 applicants have been approved. Thirteen thousand, three hundred eighty three employers have applied for participation in the program and approval has been granted to 11,904 employers. This represents 26,084 job slots and 3,994 positions filled. At that time, $18,119,342 million had been expended. Considering the delay in making funding available for this program, coupled with the slow start of the outreach effort by the Veterans Administration and the Department of Labor, which delayed publicizing the program and making application forms available to both veterans and employers, the response is most encouraging. As a matter of fact, we are only now beginning to witness a very rapid increase in the momentum of the program.

Mr. Chairman, the VFW believes that the initial funding will be insufficient to meet the increased demand for training. Although we would be more comfortable if the funding for the fiscal year 1985 was included in the appropriation, we are aware of your commitment to the Chairman of the Senate Veterans' Affairs Committee, the Honorable Alan K. Simpson, " . . . that this Subcommittee will maintain sufficient flexibility in its allocation under section 302 of the Budget Act, to permit full fiscal year 1985 funding for this program in a supplemental appropriations bill later this year, in the event that a need for such funding has been demonstrated." The VFW appreciates both your position and your personal commitment in this matter.

Mr. Chairman, no funding is proposed for the replacement medical center in the Baltimore metropolitan area listed in the current Five-Year Medical Facility Construction Plan as one of the ten medical centers most in need of construction, replacement or major modernization. Eight million dollars has already been expended for this project, $3.5 million for working drawings and $4.5 million for purchase of the construction site. Also, one million dollars has already been spent in Philadelphia, Pennsylvania for a clinical addition, nursing home care unit and parking project at the VA medical center, but no funding is included although scheduled for 1985 in the Five-Year Plan. The City of Philadelphia has donated 12 acres of land for this construction provided construction commences by December 1986. I fail to understand how $9 million and the gift of 12 acres of valuable land can be so frittered away and urge that serious consideration be given to funding both of these projects.

Mr. Chairman, the Department of Veterans Benefits is scheduled to sustain a reduction of an additional 800 personnel in the fiscal year 1985 which will bring the total loss of employees since 1976 to 6,654. Activity in the educational programs has been declining as have the caseloads in compensation, DIC, and pension which the VA has used to justify the cumulative reduction. However, in view of the excessive claim processing time and the backlog of claims, we believe the proposed reduction of an additional 800 personnel to be unreasonable. Although we concur the management improvements will enhance productivity and efficiency, the volume of claims warrants maintenance of a sizeable staff to provide timely service to claimants.

Mr. Chairman, the VFW is highly disturbed by the Administration's proposal to terminate property acquisitions by the Veterans Administration following foreclosures on home loans guaranteed by the VA. Under the proposal, the VA would pay the lender $27,500 or 60 percent of the outstanding balance leaving the lender with title to the house. This proposed change is the result of the President's Private Sector Survey on Cost Control referred to as the "Grace Commission." According to the Mortgage Bankers Association (MBA), if the proposal is implemented, the VA would lose a source of assets from which funds are derived to operate the revolving fund and Federal mortgage underwriters may find VA mortgages less attractive instruments to include in their portfolios. The MBA further suggested that the adoption of the Commission's recommendations may cause veterans to suffer by bringing about higher down payment requirements; causing higher income standards to be applied to loans; and making such loans, generally, to be more difficult to obtain -- particularly more difficult for Vietnam veterans. The VFW opposes the implementation of this proposal in the strongest terms. This proposal has been temporarily deferred since the Congressional Budget Office has opined that any savings would be short lived and would ultimately create larger deficits in future years than continuing with existing policy. Since it is doubtful this Grace Commission proposal will be implemented, the VFW supports funding for the loan guaranty program and retention of the 136 personnel (FTEE) required to operate the existing program.

Mr. Chairman, the VFW supports an appropriate cost-of-living increase in the entitlement programs. As I am sure you are aware, Public Law 98-223 expresses the sense of Congress that future compensation and DIC payments would take effect December 1st of the fiscal year involved commencing in the fiscal year 1985. The VFW supports this change and appropriation of the necessary funding. In addition, we strongly urge the granting of a 15 percent increase in subsistence allowances for those Vietnam veterans availing themselves of educational benefits under the GI Bill and those undergoing vocational rehabilitation. The last increase was a two-step, ten percent increase provided by Public Law 96-466. A five percent increase became effective October 1, 1980 and a five percent increase on January 1, 1981. According to information furnished by the National Center for Education, statistics for the years 1980 through the school year 1983-1984, indicate that all costs at public institutions have risen 31.5 percent and similar costs at all private institutions have risen 34.9 percent. We are aware, Mr. Chairman, that the Senate Veterans' Affairs Committee has recommended that instead of granting a 15 percent GI Bill increase effective January 1, 1985, as recommended by the President, a 10 percent increase should be granted effective October 1, 1984, as a cost-savings measure in the out years. Mr. Chairman, many Vietnam Era veterans believe they have received short shrift in educational benefits compared to veterans of World War II and the Korean Conflict. The lesser of the two increases, although three months earlier, may well strike the 297,000 Vietnam veterans availing themselves of educational benefits as more of the same treatment.

Mr. Chairman, in a matter not pertaining to the Veterans Administration appropriation, but coming within the purview of this Subcommittee is funding for a permanent visitors center and parking facility at Arlington National Cemetery. The existing "temporary" visitors center was completed in 1970, with a life expectancy of five years. It has deteriorated to the point where it is both an eye sore and incapable of properly accomodating the thousands of daily visitors. The voting delegates to our VFW 84th National Convention held in New Orleans, Louisiana last August, passed Resolution No. 773, entitled "Funding For A New Visitors Center For Arlington National Cemetery." In accordance therewith, it is requested $500,000 be appropriated in fiscal year 1985 for design specifications and $10 million be included in the fiscal years 1986 and 1987 for completion of construction.

Before closing, Mr. Chairman, permit me to take the opportunity to express the appreciation of the Veterans of Foreign Wars of the United States to this Subcommittee and the Appropriations Committee for over the years having demonstrated genuine compassion and concern for our nation's veterans and, also, your understanding with respect to our concerns and recommendations.

Thank you.

STATEMENT OF STEPHEN L. EDMISTON, DEPUTY NATIONAL LEGISLATIVE DIRECTOR, DISABLED AMERICAN VETERANS

Senator GARN. Next, Stephen L. Edmiston, deputy national legislative director, Disabled American Veterans.

Mr. EDMISTON. Good afternoon, Mr. Chairman. On behalf of the more than 867,000 members of the DAV, we wish to thank you and the members of the subcommittee for providing us this opportunity to comment on the VA's proposed fiscal 1985 budget request.

As you know, the House recently adopted their version of the first concurrent budget resolution which limits growth in Federal programs for fiscal year 1985 by 3.5 percent over the fiscal year 1984 levels.

Presently, the Senate is debating their version of the budget and the proposals they have under consideration appear to limit or freeze nondefense discretionary programs at the 1984 appropriations level.

The VA's fiscal year 1985 budget request for the medical care account reflects a proposed upward adjustment of approximately 6.86 percent over the 1984 levels. The DAV supports the proposed increase in the VA medical care account. However, we are quite concerned over the fact that there has been little, if any, significant real growth of the VA medical care programs in recent years.

Close examination of past VA inpatient/outpatient treatment and staffing statistics clearly substantiate this trend, which is also projected into the out-years.

A recent survey conducted by the VA further underlines that this type of health care budgeting and planning fails to acknowledge the growing demand that has been and will continue to be placed upon the VA's health care system. The survey to which I refer was conducted by the VA during January 1984. The results of this survey revealed that nationwide, VA hospitals are turning away on the average of 21,000 veterans each month who are seeking medical care and treatment. That means, Mr. Chairman, a quarter of a million veterans who are in need of health care services are turned away from VA hospitals each year without receiving needed medical treatment.

Accordingly, the DAV strongly urges you and the members of this distinguished subcommittee to recommend reasonable levels of funding to the VA medical care account to ensure veterans' medical health care needs are met.

That concludes my oral remarks. Again, thank you for the opportunity to appear this afternoon.

Senator GARN. Thank you. We appreciate your testimony. You have indicated your interest in the rehabilitation research being done by the VA. During the last year, the subcommittee has indicated a very specific interest in the VA's research voice-activated robotic prosthetic aids.

In light of your request for an additional $1 million for prosthetic research, would the DAV feel that the effort on these prosthetic aids should be accelerated?

Mr. EDMISTON. Indeed, we do.

Senator GARN. This will be part of the robotic initiative. For those who don't know, a voice-automated robot helps to feed paralyzed veterans. It functions on a number of simple vocal commands—right, left, up, down—it can be quite an advance.

Mr. EDMISTON. We appreciate your interest and your concern in agreeing with us on that.

Senator GARN. Thank you very much.

STATEMENT OF JOHN F. SHERMAN, VICE PRESIDENT, ASSOCIATION OF AMERICAN MEDICAL COLLEGES

Senator GARN. Next, Mr. John F. Sherman, vice president, Association of American Medical Colleges.

Mr. SHERMAN. I am Dr. John Sherman, vice president of the Association of American Medical Colleges. We appreciate the opportunity to testify before you on this very important appropriation matter this afternoon. As you are probably aware, our association represents all of the 127 accredited medical schools in this country, plus 400 of the major teaching hospitals, including a large number of Veterans Administration hospitals.

Because of that constituency and because of the close working relationship between the Veterans Administration facilities in the health field and our medical schools, which has so benefited the public and particularly the veteran population of the country, this looms as a very important appropriations bill for our institutions as well as for the veterans.

We are encouraged in some parts of this budget that there indeed is a recognition of two facts: One, the increases in health costs which all of us are trying to keep under control or eliminate, but more particularly, the coming increase in the size of the veteran eligible pool for care in VA installations and related institutions.

There are two areas which are of special importance to us. One has to do with what we believe to be a justified need in increasing the appropriation for medical care to at least recognize the level which has been established by other elements of the Federal Government in the care of medicare responsibility. We believe this appropriation proposal falls short by about $600 million of using the same rationale that has been employed in estimating the cost care increases for medicare eligibles.

Second, we believe that the research programs of the Veterans Administration represent an unusually valuable resource for the country as well as for enhancement in the care of veterans. Therefore, we propose a $10 million increase in the President's budget so as to further sustain that very valuable and unusual Veterans Administration research program.

I think on the basis of the previous witnesses, you may have already learned more than you want to know about the Baltimore Veterans Hospital and, therefore, other than to urge the consideration that you have already expressed a willingness to do, I will confine my remarks in that construction area and just say we believe that should have a very high priority.

We appreciate the opportunity to present these views, and I would be willing to answer any questions.

Senator GARN. Thank you, Doctor. I will make a few comments. In the case of the Baltimore situation, the administration did not request it. In the case of the medical care for the VA, it is the opposite. The President has requested a roughly $536 million increase and the budget resolution does not have it. So you have the reverse situation here. I will do what I can. I am trapped on one side by the administration and on the other side by my Congress.

Mr. SHERMAN. I understand.

Senator GARN. We will try to hold the administration request at the $536 million increase despite the budget resolution.

Mr. SHERMAN. Thank you, and I would hope our longer statement will be entered in the record.

Senator GARN. It certainly will be. Thank you, Doctor.

[The statement follows:]

STATEMENT OF THE ASSOCIATION OF AMERICAN MEDICAL COLLEGES

The Association of American Medical Colleges (AAMC) is pleased to have this opportunity to present its views on the proposed FY 1985 appropriations for the Veterans Administration.

Since its founding in 1876, the Association has steadily expanded its horizons so that today it represents the whole complex of individual organizations and institutions charged with the undergraduate and graduate education of physicians. It serves as a national voice for 127 accredited medical schools and their students; more than 400 of the major teaching hospitals in the United States; and over 70 academic and professional societies whose members are engaged in medical school teaching, patient care, and biomedical research.

The Association's constituency includes 133 VA medical facilities that are affiliated with 101 medical schools. These affiliation relationships were first established to correct problems that had developed in the VA medical care delivery system prior to World War II. It was in the historic "Policy Memorandum No. 2," that the VA defined its original objectives, one of which was to "afford the veteran a much higher standard of medical care." At that time, the most promising option in attaining this goal was to develop cooperative arrangements between VA facilities and schools of medicine.

The responsibilities of the schools and the VA in these relationships, were also outlined in that historic memorandum, and have been successfully carried out over the ensuing years. Under it, the VA operates the hospital and oversees the professional care of patients, while the medical schools are responsible for supervising and directing graduate medical education programs, i.e. residency programs, of the VA. To this end, most of the senior professional staff of the affiliated VA hospitals hold faculty appointments in the affiliated medical schools. The opportunity to be associated with a medical school and to engage in the scholarly pursuits of research and teaching has made VA positions much more attractive to highly skilled clinicians and clinical educators than otherwise would be the case. As a consequence, the caliber of care provided to veterans in those hospitals has been very high. The medical schools benefit from the infusion of these competent scholars into their ranks, as do the students who have access to the many resources of the VA. In addition, the veteran patients and the general population reap the rewards of the research projects made possible through these joint ventures. Thus, it is not difficult to see the basis for the AAMC's interest in the VA budget--particularly in the areas of medical care, research, training, and construction for medical care and research facilities.

Overall, it is the AAMC's assessment that the Administration's FY 1985 budget for the VA will barely maintain the current level of services, but in no way provide for badly-needed expansion.

Medical care

The Veterans Administration operates an enormous medical care enterprise, established to provide quality health care for the veterans of the armed forces who so devotedly served our nation. While for the most part, the VA has successfully met the responsibilities in fulfilling its mission, it has been hard-hit by the effects of forces beyond its control, such as inflation and the increases in the complexity of providing medical care.

The VA is also beginning to experience the impact of the aging veteran population. In 1981, the number of veterans age 65 and over was 3.5 million. That number is expected to increase to 7.7 million in 1990 and to 9 million in the year 2000. In fact, during the period from 1990 to 2010, a majority of all males in this country over age 65 will be eligible for VA health care benefits under current policy. Since the over-65 population, as a group, is the largest per capita consumer of medical care, it is imperative that the VA be prepared to expand its capabilities sufficiently to meet the health care needs of these citizens.

The AAMC applauds the innovation of the VA, and the high quality research undertaken at the Geriatric Research Education and Clinical Centers (GRECC), in the area of gerontology. The Association is pleased that the FY 1985 budget provides construction funding for a new GRECC in Durham, North Carolina, bringing the total number of operating GRECCs in 1985 to ten. However, this is not enough.

In constant dollars, funds for medical care in the VA have not increased for the past seven years. The FY 1985 budget request for VA medical care of $8.8 billion represents an increase of 6.9% over last year. However, this is even less than the Health Care Financing Administration (HCFA) estimate of a 7.6% increase in the target limit for expenditures used for hospitals and units exempt from Medicare's prospective payment system. In addition to the 7.6% price increase, Medicare costs are further increased by the growing number of beneficiaries receiving services, so that the total projected Medicare increase for FY 1985 is 14.6%. Because the number of VA medical care beneficiaries is expanding as well, the Association believes that the amount requested in the President's FY 1985 medical care budget is unquestionably inadequate to provide the continued high quality care our veterans deserve.

The following areas are of particular concern to the AAMC:

o The increases indicated in the budget, in most instances, cover allocations that are considered "uncontrollable" and do not provide for additional services.

o The staffing ratio of Full-Time Employment Equivalent (FTEE) personnel per census in the medical bed sections of VA medical centers rises slightly from 2.65 in FY '84 to 2.68 in FY '85, but does not nearly approximate the ratio of FTEE per adjusted census of 4.34 present in non-federal hospitals in 1982.

o $7.8 million of an $8.2 million projected savings in FY 1985, results from a proposal--developed as an outgrowth of the President's Private Sector Survey on Cost Control (Grace Commission) Report--to reduce the total number of General Schedule (GS) employees between levels 11 and 15 and their Title 38 equivalents (based on salary). For the VA, this would mean hiring non-Board Certified Physicians at lower levels or fewer Board Certified Physicians at the GS-15 level. In either case the quality of care will suffer. No matter what action the agency takes as a result of this absurd proposal, this money has been removed from the VA budget.

o Most of the 2,747 additional FTEEs funded in this budget are slated to staff new activations. This will not address the need for additional positions at existing installations.

o A total package of $29 million in pay related accounts, including the cost of increases in social security and health benefits, is not supported by this budget.

- New initiatives identified in the agency's Medical District Initiated Program Planning (MEDIPP) process cannot be funded within the budget limits set by the OMB for FY 1985. The VA is being pressed to respond to ever-changing demands and technology with an unresponsive iron-clad budget policy.

Education and Training

In addition to providing high quality health care to its veteran population, the VA, through its affiliation agreements with medical schools, makes an important contribution to the education and training of health professionals of many types. The Association is concerned that the limitations in the FY 1985 budget will be seriously detrimental to the VA's continued success in this regard. Specifically, the AAMC is distressed that:

- the Administration's budget request provides support for only 3 additional FTEE for physician house staff trainees. Even with this increase, the estimated average employment in FTEE for physicians house staff trainees in 1985 will be 34 FTEE below what it was in 1983.

- Of the $16,402,000 net increase requested for education and training activities, $16,055,000 is required for uncontrollable increases leaving a mere $347,000 for actual program changes.

The AAMC recommends that $9.4 billion, an additional $634 million (or about 8%) above the President's request, be appropriated in the FY 1985 budget for VA medical care, representing--in a reasonable comparison--a closer proportional approximation to HCFA's estimated cost increase for Medicare. In addition, the AAMC recommends that Congress direct the OMB to add sufficient FTEE to allow the VA to carry out its current obligations to our nation's veterans while preparing for future needs. It is imperative, in such a labor-intensive field as medicine, that funding and adequate physician manpower be provided for to bring the VA medical centers on par with their non-federal private and teaching hospital counterparts.

Research and Development

The Veterans Administration's intramural research program encompasses some of the most important biomedical, behavioral and rehabilitative research now underway in this country. This research is critical in terms of its overall contributions to medical knowledge, but more specifically it is important because of its special focus on medical problems unique to veterans and its indirect result of improved health care for the veteran population. Moreover, the opportunity to conduct research creates a working environment which attracts well-qualified staff physicians and clinicians and exceptionally able residents to VA facilities and retains them.

Leaving aside the allocations for the Agent Orange epidemiological study for both FYs 1984 and 1985, the research budgets for those years were allotted $164 million and $184 million, respectively. This $20 million increase in the FY 1985 budget will provide for an additional 155 FTEE. Taken alone, this is laudable, but when measured in context of the three components of the R&D complex it covers--Medical, Health Services, and Rehabilitative Research and Development--it appears rather meager. In addition, inflation and the increasing costs associated with the use of technologically advanced procedures and equipment further diminish the value of the dollar increase. The following items are also of concern to the AAMC:

o The career development program, held in high regard for its contributions to research as well as for attracting personnel to work within the VA system, is slated for an increase of $800,000, allowing for ten new appointments, bringing the total to 180. However, this is twenty positions fewer than were supported four years ago.

o While the budget shows an increase of $11.36 million over FY 1984 for investigator-initiated research, the AAMC would point out that: half the amount is to cover uncontrollable expenses; many high-quality research proposals are still unfunded; and, the severe cuts suffered because of the Budget Reconciliation Act of FY 1981 have not been fully restored.

Over the past fifteen years, in terms of 1970 dollars, funding for research has experienced an average real growth of 0.44% per year. The 1984 level is only 6.2% greater than in 1970, in 1970 dollars. The AAMC recognizes the need for fiscal austerity but must emphasize again that the research activity in progress at VA Medical Centers, in areas such as prosthetics development, spinal cord regeneration, delayed stress problems, care of the aged and assessment of cost-effective patient care technologies, addresses vitally important national needs and benefits not only veterans but the general population as well. Such research represents the real hope of eventually bringing health care costs under control. Thus, the AAMC recommends that an additional $10 million be added to the Research and Development budget, and that the OMB be directed to raise the FTEE ceiling by a minimum of 300.

Construction

The VA budget for construction provides funding for altering, expanding or improving the facilities under its jurisdiction or for its use. The AAMC is interested in this section of the VA's budget, particularly those activities related to the medical care and education programs. It is evident that appropriations in this area directly impact on the overall effectiveness and success of the VA health care enterprise.

The AAMC commends the Administration for its FY 1985 request of $288.4 million above the 1984 level for the overall VA medical construction program. However, the Association is concerned about one specific project which serves as an unfortunate example of the task the VA has before it--in terms of protecting its capital investment--and shows how a facility in a serious state of disrepair can dangerously impair the delivery process of otherwise high quality medical education and health care.

The AAMC's concern stems from the fact that funding for the renovation and expansion of the VA Medical Center (VAMC) in Baltimore is not included in the President's budget. According to the five-year "Medical Facility Construction--Needs Assessment Report," published by the VA's Department of Medicine and Surgery, funds were to be scheduled for FY 1985. It is especially distressing that the money has been removed from the budget since almost $8.5 million has already been expended for this project.

The serious inadequacies and the outdated design of this structure are probably all too well known to members of this subcommittee, because the deficiencies have been detailed in previous years' testimony. The AAMC believes that by highlighting a few stark examples of the inadequacy of the Baltimore VAMC once again, the need to address the problems generally will be acknowledged and a decision to act will be made now, before it is too late.

- The Baltimore facility, constructed in 1952 as a tuberculosis hospital, has two operating rooms to serve an annual daily assigned hospital census of approximately 222 veterans.

- The facility is completely lacking in modern day, high technology, diagnostic and therapeutic equipment for acute medical care services. In fact, there is not a CAT scanner in any of the three Maryland hospitals, necessitating the transfer of some patients (some in critical condition) to other local hospitals for diagnostic services.

- The facility has extensive safety code violations, requiring several million dollars for correction and accreditation.

- Numerous inefficiencies, relating to lack of accessible ancillary service functions and flow of patients, staff, and materials, are present.

- The facility is on a very small plot of ground without room for adequate expansion.

- The outpatient facility, in the Federal building in downtown Baltimore, is separately staffed by non-medical school-affiliated physicians, which means there is little or no continuity in the care received by Baltimore's veteran population, once they are referred to the VAMC as inpatients.

The AAMC urges the Subcommittee to reinstate funding for this project and others of similar fate so that the VA can continue its commitment of providing our nation's veterans with high quality medical care.

The Association thanks the Subcommittee very much for this opportunity to present its views on this important issue.

NATIONAL SCIENCE FOUNDATION

STATEMENT OF LLOYD M. THORNDYKE, CORPORATE PRESIDENT AND CHIEF EXECUTIVE OFFICER, ETA SYSTEMS, INC.

Senator GARN. Next, I would like to invite to the witness table Lloyd Thorndyke, corporate president and chief executive officer, ETA Systems, Inc.

Mr. THORNDYKE. Thank you, Mr. Chairman, and distinguished members of the committee. I appreciate the opportunity to appear before you today and deliver my statement on the National Science Foundation, the role of supercomputers in our colleges and universities.

I am Lloyd Thorndyke, president and chief executive officer of ETA Systems of St. Paul, Minn. I have with me John Delinka, director of government relations in our Washington, DC, office.

My company, ETA Systems, is a newly created small business totally dedicated to advancing the design, development, and manufacture of the next generation of supercomputer. ETA is a spinnoff from Control Data Corp. This spinnoff was partially triggered by several Government and university blue ribbon task groups on the national issue of sustaining U.S. supremacy in supercomputers.

My major points today are the Japanese are absolutely determined to increase their share of the world electronics market and that is well accepted. With their Government help, the Japanese also intend to gain a sizable share of the world market for supercomputers during this decade. The fact is, by our own standards of classifications of supercomputers, the Japanese have equal or superior performing supercomputers than the current U.S. models installed today. We would be foolish to believe that they are not working on even faster models, too, and they have development goals of performance in the same range as the next generation of supercomputers proposed by U.S. people in a time scale only slightly different.

Accordingly, I recommend funding the Foundation's 1985 initiative at a level sufficient to guarantee U.S. leadership in the technology of supercomputers. While I do not propose to outline in detail at this time, I believe the level of funding for fiscal year 1985 must be in the $75 million range.

My second point is, during the past 2 years, we have witnessed three of our major universities, as they are developing supercomputer capabilities without significant Government help. Fortunately, the last year the Senate Appropriations Committee recognized the seriousness of the dilemma of accessibility and passed a stopgap measure for the National Science Foundation supercomputer program.

So if you look toward 1985 and beyond, we ask, What will be the Government's answer to an increased access to supercomputers?

Mr. Chairman, I suggest the power computer is the power to dominate. For a comprehensive national security program, it is essential we maintain our leadership in supercomputer technology and applications. Our economic security is synonymous with national security.

My last point is, it is my understanding both the Senate and House are discussing budgetary figures for the Foundation's 1985 supercomputer program from about one-third to one-tenth the recommended $180 million stated by the Advisory Committee. It is difficult for me to understand disparities even in this year of tight budgets.

Since early 1970, the lack of supercomputers in the U.S. colleges and universities have been a matter of growing concern to private industry. My company, as most others, depend upon universities and colleges to provide us with advances in basic research and a significant number of trained professionals.

This is an absolute need in our competitive world. To this end, ETA systems is committed to work with the committee, the Foundation, and its advisory groups, and other private sectors to achieve the results that are critical to the long-term interests of the United States, ensuring our continued leadership in the supercomputer technology and application in the world community. Thank you.

Senator GARN. Thank you, Mr. Thorndyke. I am sure you realize, as do most who testify here, that we have difficulties many times when there are programs that are certainly worthwhile, but we are also faced with the constant barrage of criticism of $200 billion budget deficits.

We try to accomplish both, to fund adequately those needed in good programs and still try to do something about reducing the impact of those huge budget deficits.

A lot of programs have been cut over the last few years. Interestingly enough, you may or may not know, but the administration and Congress have increased NSF's research budget by 57 percent since 1981. So this has been a big increase in light of some programs that have been cut.

I have been one of those who has advocated that increase in the NSF research budget. My question would be, in light of these growths, where would you suggest we reduce NSF's budget in order to provide $55 million more for supercomputer, because that is really what we are looking at in those type of growth rates in research and development?

Simply, you are not going to get more unless you can find some place when you have budget allocations that I get from the budget committees, you have to find tradeoffs, someplace else to get it.

Mr. THORNDYKE. I am not competent nor prepared to suggest tradeoffs in the budget.

Senator GARN. Maybe it is an unfair question. I am just trying to illustrate a point. That is the problem I am faced with, particularly when I have a budget request, one that has shown significant increases, 14 percent this year over last year, when other programs are being cut. It is unrealistic in light of the overall deficits, no matter how desirable it may be to get another increase, unless I can trade it off someplace and not have an add-on to the overall deficit problem.

Mr. THORNDYKE. I certainly can sympathize with the dilemma you face. I also, in running engineering programs, at times have the same requests coming to me. At times, I have to significantly fund a particular effort well over a normal level because of my long-range goals.

In particular, the supercomputer, the insufficient funding possibly we need an increased emphasis on supercomputer use and integration in our universities so our researchers come out with an understanding of use of these large tools in our mid-1980 to 1990 technology. The supercomputer is a simulation tool, essentially, across the board to the thrust of technology, and we need people that are a lot more relevant and trained on these machines than ever before. This can only be accomplished by increased efforts. I recognize there are probably areas that a decrease would be required, but in my tradeoffs, we have to make those decisions of significant increase in one area and a balance in some other areas.

Senator GARN. Thank you very much. We appreciate your testimony.

VETERANS ADMINISTRATION

STATEMENT OF JOSEPH ZOLDAN, NATIONAL COMMANDER, JEWISH WAR VETERANS OF THE UNITED STATES OF AMERICA

Senator GARN. Next, I would like to invite to testify Joseph Zoldan, national commander, and Harris B. Stone, national executive director, Jewish War Veterans of the United States.

Mr. ZOLDAN. My name is Joseph Zoldan, and I am national director. Mr. Stone is not here today.

Senator GARN. I am sure you will do well for both of you.

Mr. ZOLDAN. I will try. The Jewish War Veterans of the U.S.A. appreciates this opportunity to testify before your subcommittee regarding the proposed construction of a permanent visitors center at Arlington Cemetary and regarding inadequate funding of some programs in the VA's proposed fiscal year 1985 budget.

JWV of the U.S.A. urges this subcommittee to expeditiously implement the Arlington Cemetery master plan and appropriate the necessary funds to construct a permanent visitors center. The fact that inadequate, temporary facilities still exist after 13 years is disgraceful. The delay in construction of permanent facilities has caused dangerous traffic congestion and substantially raised the price needed to correct this situation.

A permanent visitors center must be designed so that our tourist traffic and funeral traffic are separated. The design proposal before you can solve the traffic problem and provide a dignified accessible visitors center for Arlington Cemetery visitors.

At a cost of $17.8 million, the JWV of the U.S.A. considers this proposal to be a modest solution to a problem that has been pending too long.

In regard to the VA's proposed medical care and construction budget, JWV of the U.S.A. has long held the view that our Nation has a clear commitment to maintain and upgrade the quality of VA medical care system and to meet the health needs of an ever-aging veterans population. Therefore, as detailed in our written testimony, we urge this subcommittee to appropriate the additional $53.7 million for medical care and construction as recommended by the House Veterans' Affairs Committee in a report to the House Budget Committee—to transfer $50 million from the working reserve of the construction of major projects account fund, 1,000 additional full-time employees for outpatient services, and to appropriate the necessary funds to complete the Baltimore and Philadelphia VA medical center.

We also urge you to consider appropriating additional money to modernize or replace facilities according to demographic trends in Florida.

Another issue of concern to the JWV of the U.S.A. is the VA's proposed elimination of funding for the Emergency Veterans Job Training Act of 1983. We must continue our commitment to retrain our Vietnam veterans now so that they can find employment; the improvement in economic conditions has not significantly lowered unemployment among Vietnam veterans.

JWV of the U.S.A. supports the House Veterans' Affairs Committee proposal of authorizing $75 million to fund the Emergency Veterans Job Training Act for fiscal year 1985. We would also support the reinstatement of unused funds from the Fiscal year 1984 school program to be carried over to the fiscal year 1985 budget for the job training account.

We urge this subcommittee to carefully consider this proposal while you conduct oversight hearings on this important matter and when you appropriate the necessary funds for the VA for fiscal year 1985.

Finally, JWV of the U.S.A. is also concerned with the loss of funds for the Vietnam veteran outreach centers which were originally appropriated by Congress. The problem appears to have been an inability to spend funds set aside for hiring additional psychotherapists from the private sector. The Senate Committee on Veterans' Affairs recommended in its report to the Senate Budget Committee that $7.2 million of the fiscal year 1985 funds selected for the readjustment counselling program be reprogrammed from the contract/fee arrangements to the addition of 220 staff members for the program itself.

JWV of the U.S.A. is concerned that this recommendation will not solve the problem of determining the appropriate number of additional psychotherapists needed to provide quality care at these outreach centers. JWV of the U.S.A. believes employment of additional psychotherapists or other staff should be determined by Congress from data submitted by personnel who actually work at the outreach centers.

To conclude, JWV of the U.S.A. hopes the subcommittee will provide funding where the need is most apparent. Adequate planning on the part of the VA and Congress will be necessary if our veterans are to receive the quality care they deserve.

Senator GARN. Thank you very much. I have addressed many of the things you mentioned with the previous witnesses so I won't take your time to repeat myself. But specifically referring to the visitors center at Arlington, I couldn't agree with you more; I would like to see it built. However, it is rather frustrating if you sat here in my position—3 years, going on the fourth year—as chairman of this subcommittee, and you have testimony from the Department of the Army for Arlington National Cemetery, and they come before you and say this is what it is going to cost, and then their cost estimates increase 75 percent from 1983 to 1984, and you are hitting these budget ceilings we are talking about; you need construction in Baltimore and need more employees in the VA; you need more health care facilities in the budget, as you heard us talk about with some of the others. It is rather discouraging when you can't get an accurate estimate—when it goes up 75 percent from 1983 to 1984.

That is the problem I deal with. It is not from lack of sympathy to want to build the facility. When I used to be mayor, I could put out bids and select the low bid, and I could build something. I don't know what there is about working in Washington that nothing ever costs what it is supposed to. I don't know if people manufacture estimates to get the camel's nose under the tent and figure once we get them on the hook, then we will keep them there and get the extra money. It is very discouraging to me in trying to work on this overall budget problem and then have 75-percent cost increases. Ten percent I can understand. We were in a period of time when inflation was up, when the construction industry was on its back, and contractors were begging for jobs.

How do we get a 75-percent increase in that period of time? Back in the 1970's, I might have understood it when real estate was booming, but at the very time when the real estate industry was on its back, I get a 75-percent increase.

I just throw this out for what it is worth. It is a little hard to deal with the inaccuracy. I am not an engineer or an architect. Some of these estimates I receive stand out there in the wind. I can pick one and come as close as we get from the professionals. I am serious, and I have done it sometimes privately. I just picked a figure out of the air without knowing anything about it and come as close to the guys who went out there and we paid money to put their transits up and design things, all sorts of things.

I agree, it ought to be built, but I don't know how to get it done with a reasonable cost until somebody can come up with accurate estimates. I would be surprised if this 75-percent increase is enough. Thank you.

Mr. ZOLDAN. Thank you.

FEDERAL EMERGENCY MANAGEMENT AGENCY

STATEMENT OF GERARD A. CARLE, FIRE CHIEF OF GRACUT, MASS., ON BEHALF OF THE INTERNATIONAL ASSOCIATION OF FIRE CHIEFS

Senator GARN. Is Mr. Gerard Carle here, representing the International Association of Fire Chiefs?

Mr. CARLE. I am Chief Gerard Carle from Gracut, Mass. I am here to support the FEMA budget. I would like to make a few statements pertaining to the FEMA budget.

As you know, the fire chiefs are the professional management people that represent the fire service throughout the country, volunteers included, to continue the appropriation funds, hopefully, for the U.S. Fire Administration and the National Fire Academy to carry out the Federal Fire Prevention and Control Act.

Also, we do support the activities and do appreciate that the comments we might make on budgetary piorities of the Federal Emergency Management Agency as it affects fire protection before decisions are made.

We also require that the Federal Agency commit resources to assist in fire protection to the various communities to serve a public need and interest on a day-to-day basis.

For example, the proposed budget shows some increases in certain areas and other areas we would like to be increased, but we would not want to sacrifice the NETC West without additional moneys being funded in the budget. We appreciate the facilities required, would like to be opened in the NETC West, but without the additional funds, it would take away from the present fire academy and also the national focus throughout the country.

We, as fire chiefs, have our men going to the fire academy and the management training they do receive, in turn, they can bring back to the various facilities throughout the cities and towns throughout this great Nation.

We feel that opening the NETC West, without some prerequisite type course offered at the academy, should not replace what is happening at the academy or duplicate it. There should be some type of prerequisite. At the same time, sir, the IAFC recommends that the National Fire Academy seek academic and degree equivalency to established collegiate standards and status.

At this point, as we all know, many of our management people go to various private schools and come out with degrees or some type of accreditation, but they come out of the National Fire Academy with no qualification of that to their careers.

Also, the Fire Administration continues to support, with the support of the IAFC, the local community which we represent, and I represent, from the smaller community in New England, but throughout the country in our Nation and also overseas. There are many people who come here to learn additional technology for a safer environment of citizens and protection of our firefighters.

Fire Administration coordinates many programs and data on fire losses, deaths, injuries to the firefighters. The Firefighters Safety Office in the administration assist emergency personnel to develop different protocols on fire-related injuries and procedures to be used for the safety of our people.

The U.S. Fire Administration Office of Prevention and Control has the wholehearted support of IAFC. With these various types of programs they have, such as sprinkler systems and smoke detectors in commercial and residentual properties, we support the budget increases for automatic detection, built-in fire protection.

After a few years of looking for an administrator for the Fire Academy, President Reagan finally appointed one of our fellow fire chiefs from Los Angeles County. The Fire Service is very grateful for this. The position has finally been filled.

We do support the $2.5 million program for the automatic detection in residential and commercial properties, as well as the $750,000 for the long-term occupational disease in the Fire Service for study programs.

Community volunteer fire prevention programs, as you all know, this past year, $1 million was earmarked for 10 States and, hopefully, there will be an additional million so we can continue this program for 10 more States and eventually cover the whole country.

At this time, sir, I would like to take the opportunity to thank the Fire Emergency Management Agency and would ask your committee's support for the fiscal year 1985 budget, sir.

Senator GARN. Thank you, Chief. A personal question. How long have you been a chief?

Mr. CARLE. Seventeen years.

Senator GARN. Did you know Grant Walker?

Mr. CARLE. No, I represent a small community, so as such, I do not know the gentleman.

Senator GARN. He was a long-time firefighter and Salt Lake City chief for many years. This was before I was mayor and there came a rather serious dispute with the firefighters union and the city. The city commission took the department away from the commissioner who had headed it and gave it to me and said, "Here, you take it and straighten out this whole mess."

The reason I ask about Grant Walker, we worked through a very difficult time together. He was chief and I was his commissioner. It was a very difficult time. After we got it all put back together and settled down, then they gave it back to the other commissioners.

Mr. CARLE. I am sure you understand the problems we do have in the smaller communities, as well as the major communities.

Senator GARN. Yes, I learned a lot about fire departments in those few months. I guess I was a firefighter going in to put out a fire in the fire department is what it amounted to.

We appreciate your testimony. On April 12 at the FEMA hearing, I indicated the Agency cost-benefit study on NETC West was really not adequate and requested a revised request by May 15. So they have another week to comply with that request. I hope the Agency will be able to address the cost implications of NETC West versus some alternative proposals. Then we will be in a position to evaluate the alternatives on the basis of some fair comparisons.

Thank you very much.

Mr. CARLE. Thank you very much for the opportunity, sir.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

STATEMENTS OF:

ALAN LOVELACE, VICE PRESIDENT OF PUBLIC POLICY, AMERICAN INSTITUTE OF AERONAUTICS AND ASTRONAUTICS

DAVID ROHRBAUGH, CHAIRMAN OF SPACE SYSTEMS TECHNICAL COMMITTEE, AMERICAN INSTITUTE OF AERONAUTICS AND ASTRONAUTICS

Senator GARN. Dr. Lovelace, are you ready?

We are pleased to have Dr. Alan Lovelace in his new position, vice president of public policy; and David Rohrbaugh, chairman of the Space Systems Technical Committee. It is hard for me to think of you not being here testifying in the regular NASA hearings.

Mr. LOVELACE. Sometimes it is difficult for me, Mr. Chairman, to think of my new capacity as well. It is indeed a pleasure to be here today on behalf of AIAA which has, as I know you are aware, over 30,000 member scientists, engineers, and students engaged in every sector of the aerospace industry, government, and universities. We would like to share with you very briefly our views relative to the NASA budget for fiscal year 1985, and I would like to make a very brief comment on the aeronautics area and then I would turn to my colleague, Mr. Rohrbaugh, to do the same in the space area. If you have any questions, we will try to answer those and submit our complete statement for the record.

Mr. LOVELACE. We in AIAA strongly support the the proposed NASA aeronautics budget for fiscal year 1985. Though the fiscal year 1985 request for aeronautical R&T increased by 13.3 percent over fiscal year 1984, it still is only 10 percent greater than the actual amount spent in fiscal year 1980, not counting inflation.

In general, we support the major thrusts and various program areas outlined in NASA's proposed budget. However, we would like to discuss four main recommendations in order to provide for a more aggressive and properly balanced program.

One, the funding and manpower for broad-based applied research and the associated general level of funding for the R&T base should be markedly increased.

Two, the budget for the propfan program should be increased sufficiently to include the planned flight tests of the 9-foot diameter, large-scale advanced propeller.

Three, funding for current NASA research and technology programs related to high-performance military aircraft and helicopters should be increased during the period fiscal years 1985 to 1990 so that these NASA programs can influence the next generation of military tactical aircraft.

And, finally, the substantial increase in funding in fiscal year 1985 for multidisciplinary research is wise and should be continued to provide grants and contracts for research at universities.

I will, in the interest of time, not elaborate on these points but introduce Mr. Rohrbaugh who will make similar comments.

Mr. ROHRBAUGH. We have organized our remarks in the area of space science applications, technology utilization, space transportation, and space research and technology.

In the area of space science and applications, we are gratified NASA is proposing a new start for the Mars Geoscience/Climatology Orbiter, the first in a new class of low-cost planetary observers.

For near-Earth studies, the Shuttle potentially offers a variety of opportunities for space science. However, in our testimony last year, we expressed concern over the slow pace of Shuttle science development. We must reiterate our concern this year. Of 29 U.S. experiments selected from the 1978 announcement of opportunity, only a handful have been funded; none have flown.

In our testimony last year, we underscored the importance of strong, basic research programs. Unfortunately, in the President's budget, the planetary exploration research analysis budget is down 13 percent from last year and physics and astronomy R&A is down 5 percent after inflation.

In the area of space and terrestrial applications, we continue to support the strategy of transferring mature capabilities to other civil or commercial operators and users as appropriate. However, the evolution of the U.S. space materials processing program has been slow. NASA should continue to support materials research at an increased level of support.

In considering the importance of the NASA advanced communication technology satellite program, the AIAA is on record in prior congressional testimony in support of the ACTS program. As private-sector initiatives are developed which adequately cover the aspect of the ACTS technology, a reexamination of the program content may be required.

I would now like to turn to the area of space transportation. During the past year, the Shuttle moved closer to a true operational capability. Obtaining such capability must continue to be NASA's highest priority. It is essential that the Government, with the help of the Shuttle industrial team, design an orbiter production and operational support plan for a 15- to 20-year program. Any system that is committed to supporting long-range national objectives, as is the Shuttle, must have the Government's commitment.

We are very pleased that the President has directed NASA to proceed with a manned space station. There can be no more fitting tribute to America's vision than the beginning of a permanent presence of U.S. citizens in space in 1992, the 500th anniversary of Columbus' historic voyage.

A balanced program for our national space operations capability should also include planning for advanced launch vehicles and orbital maneuvering and transfer capabilities. Overall, we believe the research and technology program is being well supported.

In conclusion, Mr. Chairman, we feel that the NASA space program is relatively healthy and well-balanced, but we find no long-range plan, no vision by which today's activities can be measured. Without such a long-range perspective, the adequacy of current plans defies assessment. With it, new opportunities become clear.

We feel that a national long-range space program plan could be a dynamic living strategy without violating our call for stable commitments.

Mr. Chairman, that concludes our prepared remarks. We would, of course, be happy to answer questions.

Senator GARN. Thank you very much, gentlemen. I gather from your testimony you would support action of the House authorizing committee in adding $40 million for the eventual flight demonstration of the advanced communications technology satellite.

Mr. LOVELACE. I think the question, if I may repeat it——-

Senator GARN. Do you agree with the House action?

Mr. LOVELACE. I think the answer is basically yes, we do.

Senator GARN. The only other question I would have, looking at the propfan, do you believe there is a marketing segment for it, a niche it can fit in where the airlines will say, "We want to buy that"?

Mr. LOVELACE. Let me give you my answer and then possibly Mr. Rohrbaugh has some embellishment in addition to that.

I think if we can demonstrate the technology—that is, not just demonstrate in the laboratory, but demonstrate the efficiencies associated with propfan which are projected to be very high, counter-rotating propfan—I believe that there is a market. I believe that the temporary relief that we seem to be enjoying in terms of the so-called energy crisis is only a momentary respite. I think that technology will come back very strong and there is a lot of work that still has to be done, but I can see it integrated into commercial transports as well as into military fields.

Senator GARN. I suppose you have got one problem, too, that of public acceptance, with everyone so accustomed now to jets and thinking that props are old technology. I suppose that is something we would have to overcome, too. It is a little bit surprising to me, as I see it develop now. I suppose it would have developed more naturally had the jet not come along, but most of my flight time, at least 80 percent of my 10,000 hours flying time is prop, only 2,000 of it jet. They didn't change very much over the years that I flew them.

It is amazing to me over such a long period of time there was so little done with the prop being so inefficient.

Mr. LOVELACE. Senator Garn, if I could comment on that, I had the initial same reactions. It finally occurred to me, the technology we are talking about really is the full extension of the high bypass fan engine. It happens not to be ducted and it happens to be very high bypass ratio, but that really is what these advanced turboprop concepts are.

I think your point about representing those to the public in the right way is a very good one and part of that has to do with technology associated with reducing vibration, too, in the aircraft, in the fuselage structure.

Senator GARN. Don't misunderstand me, I am not opposed to going ahead. You know my bias toward aviation is overwhelming. I want to try everything new, including the Shuttle. If you had forgotten, even though there——

Mr. LOVELACE. Endorses your candidacy being an astronaut on the Shuttle.

Senator GARN. You weren't here. I threw some additional tidbits in this year. If you haven't noticed, I am a lot thinner than I was last year.

Mr. LOVELACE. I wondered where I must have gotten that weight from.

Senator GARN. I simply decided there may be one fly in the ointment; play along with me, say I can go, and then they give me a physical and say you flunk. So I decided to get back in shape. I wasn't in this good shape when I was on active duty. My resting pulse rate is down to 45. I run 4 to 5 miles 6 days a week, even with the cold, because when you run, you breathe through your mouth, not your nose. So I think I removed the last obstacle. I can think of nothing where they would have good reason to deny me going on the Shuttle, unless they want to cease to get $7 billion a year out of this subcommittee.

Mr. ROHRBAUGH. Sounds like you are ready to go.

Senator GARN. I am all for the propfan. I just have to ask devil's advocate questions, but they are serious questions. As much as I think it should be advanced and, obviously, the fuel efficiency of current turboprops over pure jet engines and the limitation is still the prop because even on today's prop jets, the prop hasn't changed very much. It has flatter and wider blades and a few things like that, but no real basic change in the design at all from old props, like the one I have hanging in my den from a 1934 Fairchild.

So I think we should go ahead and not get behind the power curve on it. I think it will eventually happen. I do think we have to be concerned about acceptance by the public and hopefully the marketplace is in a state that the airlines can afford to buy equipment of that kind.

Thank you very much, and I especially appreciate your endorsement of my candidacy for the Shuttle.

Mr. LOVELACE. Thank you, Mr. Chairman.

[The statement follows:]

JOINT STATEMENT OF DR. ALAN M. LOVELACE, VICE PRESIDENT, PUBLIC POLICY, AND DAVID ROHRBAUGH, CHAIRMAN, SPACE SYSTEMS TECHNICAL COMMITTEE, AMERICAN INSTITUTE OF AERONAUTICS AND ASTRONAUTICS

We welcome the opportunity to come before you again this year to offer an outside perspective on the NASA budget. The AIAA is a non-profit technical professional society with over 34,000 members who are engineers, scientists and students engaged in every sector of the aerospace profession from industry to government to the universities.

To further scientific and technical advancement, we have 51 technical committees covering every aspect of the aerospace profession. Our testimony represents the expertise of a select group of people from these committees who were given this responsibility by me in my capacity as Vice President for Public Policy.

Aeronautics

We strongly support the proposed NASA aeronautics budget for FY 85. Though the FY 85 request for aeronautical R & T increased by 13.3 percent over FY 84, it still is only 10 percent greater than the actual amount spent in FY 80 not counting inflation.

In general we support the major thrusts and various program areas outlined in NASA's proposed budget. However, we would like to discuss four main recommendations to provide a more aggressive and properly balanced program:

1. The funding and manpower for broad-based applied research and the associated general level of funding for the R & T base should be markedly increased.
2. The budget for the Propfan Program should be increased sufficiently to include the planned flight tests of the 9-foot diameter, large-scale advanced propeller.
3. Funding for current NASA research and technology programs related to high-performance military aircraft and helicopters should be increased during the period from FY 85 to FY 90, so that these NASA programs can influence the next generation of military tactical aircraft.
4. The substantial increase in funding in FY 85 for multidisciplinary research is wise and should be continued to provide grants and contracts for research at universitiies. However, the methods used in conducting these programs must be improved to reap the multiple research and educational benefits possible from these investments.

1) Research and Technology Base

We recommend a marked increase in both funding and the number of researchers assigned to applied research within the R & T base. These increases should be directed into the primary areas of aerodynamics, structures, propulsion and flight controls and into methods for integrating these crucial areas. We recommend a significant increase in supporting funds to operate and upgrade NASA's wind tunnels to increase the available capacity of these facilities. NASA should double or triple the flow of research data and new concepts for innovative aircraft configuration components which are needed for superior aircraft designs. NASA should also concentrate on hiring talented research engineers and scientists in the aeronautical field but should not generally retrain people working in other areas in or out of NASA.

There has been a substantial shortfall in applied research results from NASA. The level of effort has been too low to provide industry and the military with sufficient methods, basic data and fundamental advancements needed to continue to develop and produce superior aircraft. This shortfall came about as a result of the cancellation of systems technology programs by the administration during FY 83. Portions of these programs were moved to the R & T base by NASA, resulting in the displacement of ongoing R & T programs. In addition, Congress reduced the R & T base by $12 million in the 84 budget, and, more important long term R & T base programs were cut. Now in the FY 85 budget the House has approved a reduction of $11 million from the R & T base in order to support increases in other programs. The idea of using the R & T base as a reservoir to fund more visible systems technology programs can be likened to the metaphor of "eating your seed corn;" you are essentially devouring your ability to sustain yourself in the future.

2) The Propfan Program

We strongly recommend that Congress augment the NASA budget to provide funding for the flight tests of the large scale advanced propeller. The propfan offers the potential of significantly reducing fuel consumption of civil and military transports and possibly naval anti-submarine aircraft. The technology has not been sufficiently developed nor tested to gain the acceptance necessary for the large-scale investments it will require from the private sector.

3) High Performance Military Aircraft and Helicopters

Funding for current NASA programs applicable to advanced fighters and helicopters should also be increased during the period FY 85 to FY 90 to ensure that these programs will benefit the next generation of tactical aircraft and helicopters. The Air Force and Navy are initiating major programs this year with planned technology cutoff dates between 1988 and 1990. It is extremely important to accelerate appropriate programs to meet the services' technology cutoff dates. Otherwise potentially valuable technological advances will not be designed into these aircraft, and a considerable amount of NASA time, funds and effort might not pay off when needed. Efforts in these areas could be reduced in subsequent years.

4) Multidisciplinary Research

The FY 85 budget for multidisciplinary research grants and contracts to universities provides a funding level almost twice as great as that of FY 84, but about 60 percent below the FY 82 expenditures corrected for inflation. NASA funding for universities under this program and other R & T programs is wise, because it can provide low-cost aeronautical research and also advance aeronautical education. We recommend that NASA consider two improvements in the methods used for providing support under many of these programs: The programs at universities should be planned on a multi-year basis, and the majority of the research should be done at the universities so that graduate students do not have to be removed to NASA centers.

Space

This year we have organized our remarks into the areas of space science and applications, space transportation, and space research and technology.

In the area of space science and applications, we are gratified that NASA is proposing a new start for the Mars Geoscience/ Climatology Orbiter, the first in a new class of low-cost planetary observers. We are also encouraged with the new start of the Upper Atmosphere Research Satellite which we feel is indeed timely.

For near-Earth studies, the Shuttle potentially offers a variety of oportunities for space science. The successful Spacelab mission last year clearly demonstrated that we are now well on our way towards realizing that potential. However, in our testimony to you last year we expressed concern over the slow pace of Shuttle science development. We must reiterate our concern this year. Of 29 U.S. experiments selected from the 1978 Announcement of Opportunity, only a handful have been funded; none have flown. Attention needs to be focused on smaller payloads not requiring full pallet integration, including get-away specials and free-flyers.

Last year we also underscored the importance of a strong basic research program. Unfortunately, the planetary exploration research and analysis budget is down 13 percent from last year, and the physics and astronomy R & A is down 5 percent after inflation.

In the area of space and terrestrial applications, we continue to support the strategy of transferring mature capabilities to other civil or commercial operators and users as appropriate. However, the evolution of the U.S. space materials processing program has been slow. NASA should continue to support materials research at an increased level of support, and should plan for materials research as a part of the space station capability and establish reasonable policies for the use of that facility by industry.

In considering the importance of NASA's Advanced Communications Technology Satellite, ACTS, the AIAA is on record in prior testimony in support of the ACTS program. As private sector initiatives are developed which adequately cover the aspects of the ACTS technologies, a reexamination of the program content may be required. Certainly continued U.S. leadership in the field of space communications, the vanguard of space commercialization, is consistent with both administration and congressional guidance.

Before leaving the area of space applications, there is one more point which must be noted. We have cited "balance" as a criterion for an effective space program. We therefore applaud the balance NASA has struck between the science and application programs and other flight activities. We concur that this balance should be maintained in the future.

I would now like to turn to the area of space transportation. During the past year the Shuttle has moved closer to a true operational capability. Obtaining such a capability must continue to be NASA's highest priority. We have consistently held an opinion that an investment which retains the option for an additional Orbiter would be wise. The capability to produce Orbiters is a national asset that has taken twelve years to develop. It is essential that the government, with the help of the Shuttle industrial team, define an Orbiter production and operational support plan for a 15-to 20-year program. Any system that is committed to supporting long-range national objectives, as is the Space Shuttle, must have the Government's committment.

We are very pleased that the President has directed NASA to proceed with a manned space station. There can be no more fitting tribute to America's vision than that the beginning of a permanent presence of U.S. citizens in space in 1992 will be the 500th anniversary of Columbus' historic voyage.

A balanced program for our national space operations capability should also include planning for advanced launch vehicles and orbital maneuvering and transfer capabilities. Effective operations in Low Earth Orbit will require an orbital maneuvering vehicle. The continued funding of this program is essential to provide a vital link in our transportaton system. Similarly, our support for the orbit transfer vehicle development program remains strong.

I would now like to turn to the Space Research and Technology portion of the budget, which we consider to be the hear of NASA's future civil space capabilities.

For several years we have expressed specific concern about support for advanced liquid rocket propulsion technology. Last year we published an Institute position paper citing specific areas of national weakness in this vital technical field. To quote from the conclusion of our evaluation: "The fundamental lack of preparedness in this area, caused by the absence of an adequately funded technology and development support base, leaves the U.S. without the capability to properly pursue the next and succeeding generations of space vehicles."

Overall, we believe the research and technology program is being well supported.

In conclusion, Mr. Chairman, we feel that NASA's space program is relatively healthy and well-balanced, but we find no long-range plan, no vision by which today's activities can be measured. Without such long-range perspective, the adequacy of current plans defies assessment. With it, new oportunities become clear.

We feel that a national long-range space program plan could be a dynamic, living, strategy, without violating our call for stable commitments. Let us join together to build and maintain a consensus regarding our Nation's future civil space activities. With such a vision we shall all advance.

Mr. Chairman, that concludes our prepared remarks. We would, of course, be happy to answer questions.

NATIONAL SCIENCE FOUNDATION

STATEMENT OF LORIN I. NEVLING, JR., DIRECTOR, CHICAGO'S FIELD MUSEUM, AND PRESIDENT, ASSOCIATION OF SCIENCE MUSEUM DIRECTORS, ON BEHALF OF THE ASSOCIATION OF MUSEUMS AND ASSOCIATION OF SCIENCE-TECHNOLOGY CENTERS

Senator GARN. Next is Mr. Lorin I Nevling, Jr., director of Chicago's Field Museum, and president of the Association of Science Museum Directors, and also on behalf of the Association of Museums and Association of Science-Technology Centers.

Mr. NEVLING. Mr. Chairman, thank you for the opportunity to address you today. You already have a copy of my full statement. Rather than take your time, I would just like to draw your attention to some of what I consider major points.

Senator GARN. I appreciate that. We will include your full statement in the record following your oral presentation.

Mr. NEVLING. I am Lorin Nevling, director of the Field Museum of Natural History in Chicago. The field museum is one of 800 museums in the country and approximately 100 of these combine basic research with public exhibition and public education.

Unlike research centers or universities, our museums and resources are accessible to the general public as well as to students in a scientific community. Our collections are the basic research resource available for scientific research, not just for museum scientists but scientists from throughout the Nation and around the world.

For example, the total holdings of biological specimens in the United States now numbers about 191 million. My particular institution, Field Museum, holds 12 million, and we cooperate with scientists around the world in that we loan approximately 65,000 specimens each year.

We support management of collections for wider availability as research resources in the entire scientific community, not merely the museums entrusted with their care. We strongly urge the committee to recommend continued and increased allocations for those programs that support research collections and utilization through research.

There are two programs within that, biological research resources, which has a budget of approximately $3 million, and a smaller program of about $1 million in anthropology.

Over the past decade, approximately 50 institutions, including both museums and universities, have been supported. It is my estimate that there may be as many as 1,142 which are eligible to compete. So at this point in time, we have very, very sparse coverage.

As museums, we also have responsibility to the general public. We share responsibilities with schools and universities in the process of science education—they form classroom instruction, and we, by the experience of exploration and discovery through exhibits and public educational programming.

We need to be allowed to compete independently in all areas of NSF support in the arena of education as we do now in scientific research. Education is not limited to textbooks, films, and computers; it is museums as well. Museums provide experiences and make learning more than a process of memorizing skills, facts, and abstract notions. The goals for the National Science Foundation must be broadened to include diverse audiences through programs such as support for permanent and special exhibitions.

In our particular case, we intend to spend $10.2 million on permanent exhibits between now and 1992 and it would be nice, in terms of our science exhibits, to have some support from the Foundation. That support is very important because it can act as important leverage for raising funds from the local private and corporate Foundation world.

We also need to think about adult education and experienced base instruction for young people. At present, support for such programs is either nonexistent, as in the case for exhibitions, or minimally possible through narrowly funded programs called special activities.

The real question is, Are museums educational institutions? Just for an example, I would like to tell you what we are doing in our museum. We will have approximately 200,000 schoolchildren come to our museum in groups. Over 40 percent will receive some kind of organized program that lasts for an hour or more. We will make 4,000 loans of experienced boxes and many diagrams to the public school system. We will hold 115 children's workshops and have two programs this summer called Science in Action; one in biology and the other in anthropology, which attempts to show youngsters that are beginning either sophomore or junior year in public schools those that are high achievers what science is all about.

For families, we will run 70 environmental field trips; we have 140 adult evening courses. We had a volunteer program last year. They contributed 120 man-years of service to the museum.

At the professional level, students are doing doctoral research on collections in our museum. We have a visiting science program in geology. Many of our staff hold adjunct professorships at local universities.

Our scientific staff is composed of 36 people, 35 holding Ph.D.'s. We train educators how to network with their local school systems.

I hope you can see we are educational institutions in our own right and one of the things in practical terms I would like to ask today is that museums be recognized as educational institutions so that we are able to compete on our own merits in all National Science Foundation programs.

Second, I would like to see an increase in allocation of collection support; and, third, to broaden the goals and financial base of the science education category to include diverse audiences and support for exhibitions.

Not all of our recommendations have increased funding implications, but one of the important needs is recognition that museums have come of age in the arena of education.

I will be happy to answer any questions. Thank you.

Senator GARN. Thank you very much. You note there is a need for NSF to support computer-based information systems on museum collections. What role do you see for NSF in this effort? Is it developing such systems on a local level or supporting the purchase of computer hardware, funding scientists to do the cataloging, or developing national data bases?

Mr. NEVLING. One of the most important things we need right now is for hardware. Our problem is that even though we are a museum that is relatively large in terms of number of collections and overall in terms of number of staff, that the computer hardware that would be involved with the management of the collections has to be totally dedicated to that issue, and we would very much like to see that opened up a bit so that the same piece of machinery could also be used for the research programs.

Senator GARN. Thank you very much.

[The statement follows:]

STATEMENT OF LORIN I. NEVLING, JR., DIRECTOR, FIELD MUSEUM OF NATURAL HISTORY, AMERICAN ASSOCIATION OF MUSEUMS, ALSO REPRESENTING THE ASSOCIATION OF SCIENCE MUSEUM DIRECTORS AND THE ASSOCIATION OF SCIENCE-TECHNOLOGY CENTERS

Mr. Chairman and members of the committee:

Thank you for providing the opportunity for the museum community to testify on the fiscal 1985 budget request for the National Science Foundation. I am here today on behalf of the American Association of Museums, the Association of Science-Technology Centers and the Association of Science Museum Directors, of which I am president. In my capacity as vice-president of the Association of Systematics Collections, I would like to voice concerns in the research area shared by the institutions--museums and universities--entrusted with biological research collections. Together these organizations represent the diversity of science museums in this country--from natural history museums, such as my own institution, Field Museum of Natural History--science-technology centers and planetariums, to museums with living collections, such as zoos and botanical gardens.

Before I begin to describe the role of these institutions in basic scientific research and science education and the role NSF plays in support of these activities, I would like to thank this committee for its steady support of the National Science Foundation, particularly the initiatives the committee undertook to encourage the rebirth of the science education programs within the Foundation. While many programs to increase the nation's science and math skills and upgrade science teaching have been proposed, NSF's program is well beyond the planning stage because of the foresight and commitment of this committee and its counterpart in the House.

Science museums are unique institutions within the science community. Within the context of the science museum, both basic scientific research and public education in science proceed simultaneously. A continuum between research and education exists in the science museum that does not exist to the same degree or with the same character elsewhere. Unlike research centers or universities, museums and their collections are accessible to scientists, students and the general public alike. No credentials are required to visit and enjoy museums. They are open and inviting places, providing information and instruction on a wealth of science and science-related subjects. More than half the visits paid to museums annually are paid to science museums. This immense popularity is just one side of the educational activities that take place in science museums.

Over the last decade as teaching in science and math declined, as schools reduced budget allocations for equipment and new curricula, museums enlarged their role as educators. Most science museums have active teacher training programs. Through these programs teachers can learn more about science, more about teaching it, and can learn to use the resources of museums to enrich their classroom activities. Students of all ages have the opportunity to experience science in ways increasingly unavailable to them in their schools. Courses in computers, special classes that allow children to manipulate materials, conduct experiments, make discoveries about the world, and exhibitions that can bring information together in a lively and informative way give children a chance to be the natural scientists they are in a setting conducive to learning. Museums have also made pioneering efforts to involve young girls and minority students in science and math at key junctures in their educational development to encourage their long-term interest and competency in these subjects.

We are all familiar with the public face of museums and increasingly cognizant of their contributions to science and math education, but there is another face that is little understood--this is the research function of museums. Many science museums, particularly natural history museum, also serve as major resource centers for studies in the natural sciences and anthropology. There are over 200 million specimens in the collections of America's natural history museums. These collections are used not only by scientists and researchers on a museum's staff but by scientists in universities, by government agencies and by industry. These collections continue to grow as a result of research and must be preserved and cared for. The data associated with each specimen must be recorded and maintained in a useful and accessible manner and available to scientists engaged in research. The demands placed on the research function of museums, like those on public programming, continue to increase. In many cases, specimens in natural history collections provide the only context in which to study and comprehend fundamental changes in the world around us. The responsibility for caring and preserving these collections is an immense and costly one.

NSF currently supports the activities of science museums in three main areas:

--basic research in biology, anthropology and geology;
--management of collections for wider availability as research resources; and
--science education programs.

All NSF grants for basic research are made to individual scientists. Some of these scientists work in museums; others utilize museum collections to conduct their research. Biological collections are supported through the Biological Research Resources program, established by NSF in 1972. Anthropological research collections are supported through a program established in 1977. The Association of Systematics Collections estimates than there are more that 150 natural history collections in critical need of support. To date only half of these housed in approximately 25 institutions have received grants to care for and make available their biological collections for research. There is a concomitant need to support computer-based information systems about these collections to realize their full potential to the science community. These collections are the heart of America's natural history museums and NSF support in this area is essential to their stability and usefulness.

Although the budget request for NSF for fiscal 1985 increases support for the research directorates, we would like to make the following recommendations:

1) Increase allocations for collections support.

NSF has provided key support over the last decade to biological and anthropological collections to increase their availability to researchers. The needs in this area have always outstripped the resources allocated by the Foundation for its two collections programs. The Biological Research Resources has averaged less that $3 million a year over the 12 years of the programs existance. Funds for the Anthropological Research Resources program have never exceeded $1 million in a fiscal year. Museums are in a race against time in their efforts to stabilize the condition of collections and preserve the data associated with them which is essential to their usefulness to researchers. Approximately 36 percent of the biological speicmens in collections are uncatalogued, therefore, unavailable to research scientists. More support is needed to maintain their physical condition, organize them and manage them. We strongly urge recommendations from this committee to increase the allocations for these programs.

2) Encourage a continued balance in NSF in its support for basic and applied research.

The ecomomic pressures to keep American technology innovative affect priorities in agencies across the government. It is essential for NSF to maintain a primary commitment to basic research. Such research is thegroundwork for all subsequent development and innovation in applied science and technology. While industry in its own interest can be expected to invest in applied research, the sources of support for the less accessible, basic research done by universities and museums are limited. NSF has played a major role in support of important areas of research into the basic sciences.

3) Include museums as eligible institutions throughout NSF research guidelines

In order to compete fairly for much needed support in the research directorates, museums must be mentioned by guidelines as among the eligible institutions. The inclusion of museums by name aboids the inadvertent exclusion of htese institutions form programs to which they are otherwise eligible.

4) Support the development of a national biological survey.

There is currently no complete inventory of plants and animals native to the United States. The lack of such an inventory makes a comprehensive tracking of biological change impossible. The heightened sense of jeopardy about the environment, increasing requirements to evaluate the environmental impact of construction and development projects, and the steady loss of species through environmental changes all point up the need to begin to compile such an inventory. A national biological survey would be a broadly collaborative effort extending over many years. It could expect to receive support for elements of such a project from a variety of sources. Nevertheless, the single most important source of funding would of necessity be the federal government, and the logical lead agency given its areas of responsibility would be the National Science Foundation. The costs of such a survey undertaken over a ten year period would require a commitment from NSF estimated at $30 million.

NSF has a unique role to play in effecting basic improvements in math and science learning in this country. It has the potential to make fundamental improvements in this area through leadership, imagination, and a commitment to quality. The three programs NSF has developed--Materials Research and Development, Teacher Development and Incentives and Special Activities, including a category in informal science education--provide the education community with a sense of NSF's priorities.

We have no complaints with NSF's initial framing of its role in science education but see both problems and opportunities that could be addressed in the coming year with little disruption and small additional resources:

1) Strengthen the grant review process.

The single greatest contribution that NSF can make in scinece education is to award grants of the highest quality. NSF's reputation as an agency that supports creativity and quality in all areas of basic research gives its grants in science education an important multiplier effect. The funded projects are viewed as model initiatives and consequently attract attention and the support of the private sector. To confirm this effect, the grants in the program need to be widely regarded as the result of vigorous peer review, conforming to clearly stated goals in each program and reflecting publicly stated priorities for NSF support.

2) Create Informal Science Education as a separate category of support.

Informal Science Education now functions as a subcategory in Special Activities with "Information and Studies." Given the importance and impact of museum exhibitions and programming in bringing science learning and information to pre-schoolers, school children and adults, the category is inappropriately characterized under Special Activities. Museums have had an immense impact on learning and the techniques of teaching. They consistently produce programs with solid content and innovative formats with broad appeal at very low cost. Museums are collaborative institutions with strong links to schools, community groups, and higher education. They are conducive settings for learning at all ages and levels. Museums are joined in this category of support principally by public broadcasting an equally strong link in the informal education system. To subsume a major approach to learning in a miscellaneous category undermines the effectiveness of NSF and underestimates (if not disparages) the contributions and commitment of important educational institutions to the improvement of math and science learning in this country.

3) Broaden the goals of the Informal Science Education category to include general audiences and increase support for exhibitions.

The current guidelines require that programs in Informal Science Educaton address the needs of precollege students exclusively. While we understand the importance of establishing this as a prioriitiy for the program, it should not be the program's only goal. NSF through its support of science activities aimed at more general audiences, particularly exhibitions, can help to bring critical information to this nation's citizens on science, and on science-related issues with important public policy implications. A well-informed citizenry is key to a balanced discussion of the pressing issues that face us today--energy, nuclear war, the environment, the computer age and its effects on the economy and our daily lives. The National Science Foundation should be the federal agency that fosters and supports this discussion. The director of NSF in his congressional testimony this year described education as a "seamless web." We agree with this assessment and would encourage the Foundation to dedicate part of its grant support to the education of the general public.

4) Recognize museums as educational institutions in their own right.

Although currently widely eligible to compete for support in the curriculum development and teacher training categories, museums have found their eligibility enhanced by applying jointly with a traditional, degree-granting educational institution. The implication that museums are secondary educational institutions is both unfair and wrong. During the decade when traditional education systems were failing to meet the needs of students and teachers, science museums were engaged in developing effective and innovative approaches to science and math learning. NSF must make a special effort through the development of its guidelines, the orientation of its program staff and the selection of its panels to treat applications from all educational institutions on their merits.

5) Increase the allocation of funds for Informal Science Education.

Currently, $5 million is allocated for Special Activities, which includes informal science educaton. While funding for materials development and teacher training have reached levels commensurate with the agency's present ability to administer grants responsibly, the level of funds for informal science education remains extremely low. We urge an increase in this category of funding to $10 million and recommend a modest growth in funding for the other categories.

1985

No Longer the Hidden Agenda

Research Goes Public

LORIN I. NEVLING, JR.

In the late 1970s the Field Museum surveyed a segment of its members to determine, among other things, their perceptions of the museum. We were startled to learn that they did not perceive us as a research institution. This was especially disquieting because for years we had made a large investment in annual members' nights at which members had access to both collection and research areas. Members also receive a monthly bulletin that often features articles on museum research. Despite these efforts—and despite the fact that the Field is one of the major research institutions of its kind in the world and its collections recognized by discipline-oriented societies as national research resources—our members simply did not think of research as one of our major functions.

Research is, in fact, a museum's almost hidden agenda. If the heart of a museum is its collections,[1] those collections must be arranged in some sort of order; that responsibility, in turn, commits the museum to research. Yet the public is largely unaware of museum research, and even the museum community itself does not routinely acknowledge it. The American Association of Museums does not recognize, even informally, the research museum as a special category.[2]

In a research museum as much as one-third or more of the total budget might be allocated to collection and research costs. A very small percentage of the collections—the tip of the iceberg—may be on exhibit. Much of the museum's activity is out of public sight. The amount of collection-oriented research carried on by museum scholars is less than that carried out on museum collections by colleagues outside the museum. Research museums are net lenders of collections; they are major supporters of the research effort of the nation.

The public reputation of a museum, however, is generally local and based primarily on its exhibits and educational programming. These are the functions that directly involve the museum's visitors. A museum engaged in basic, or pure, research may have a national or international scholarly reputation, but its visitors perceive it as identical to the museum that does only summative research, that is, pulling together previously documented information on a subject to present an exhibition or a public program.

Obviously, it costs a lot more to *do* research than to *talk* about it. Before our current era of economic stress, however, research museums showed little concern over whether their visitors knew the full extent of what went on behind the scenes. Recently, with financial support from federal granting agencies dwindling and private support slow in forthcoming, research museums are increasingly concerned about their reputations with a variety of funding sources. Despite the fact that they are enormously more expensive to operate, they have no fund-raising edge over museums that are not committed to basic research. At the same time, the costs of maintaining open-ended excellence in basic research are increasing. Many research institutions would find the financial burden of basic research intolerable were it not for the keen sense of responsibility to the collections and to their use through research and the public programs of education and exhibition. It is time that research museums integrate research into their public programs, too, and that they make themselves known to their local publics as research institutions.

How do you go about portraying the research function of a museum? Some museums have attempted to highlight the results of research through the media, but basic research has proved to be a very difficult commodity to "sell" to the media on a continuing basis. The larger the collection the more likely it is to be worldwide in scope and the museum's curator-scholars to be studying in remote areas. A small museum staff working locally often receives more coverage in the media than a large museum with a large staff working internationally.

At the Field Museum we tried, several years ago, to put our research before the public. To celebrate the museum's 75th anniversary, an exhibit was developed around three major themes: a sense of wonder, a sense of history and a sense of discovery. The "discovery" component, which addressed museum-based research, proved the most difficult for the public to understand.

Shortly thereafter a new administrative level was introduced to oversee the museum's three programmatic departments—science (the research function), education and exhibition. This was a pivotal intellectual and organizational step because it forced the issue of programmatic cohesiveness internally and set the stage for future change. A Program Planning and Evaluation Committee composed of trustees and staff likewise fostered thoughtful consideration about the appropriate relationship among functions and mission.

A flow chart was developed to illustrate how museum interrelationships work and define how scientific research, education and exhibition relate to one another. Research—the heart of the matter—was placed in the museum context in an easily understandable way. Researchers, the curator-scholars, represent all of us in the human quest for knowledge about ourselves and the world around us. These scholars are not only the historians of the working world; they use research as a tool to predict interconnections past, present and future. Each generation of scholars adds to the data in particular fields, accumulating, and thus increasing, knowledge and understanding. Scholars develop a specialized technical language as they organize and study various collections; they share their knowledge through scholarly, peer publications such as our journal *Fieldiana*.

The role of museum educators and exhibit designers is to "translate" this specialized language into terms that will foster visitors' understanding, perception and appreciation. Museum educators develop and present a variety of programs that differ in depth and scope to involve a diverse, lifelong-learning audience. Exhibit designers, working with educators and scholars, provide the visual interpretation by presenting objects and text in ways that attract and involve the visitors' attention.

The flow chart correctly ordered the programmatic departments, as does the museum's new statement of purpose. This effort coincided with the museum's

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LORIN I. NEVLING, JR., is director of the Field Museum of Natural History, Chicago.

commitment to provide accessibility to its physical facilities, programs and employment. Intellectual accessibility became the next issue to be addressed, and it seemed logical that the research message and intellectual accessibility could be combined into an orientation center.

There are excellent models for orientation centers in history museums and particularly in the historic and natural sites operated by the National Park Service. The orientation center provides the museum with the opportunity to present its full mission to the public. At the same time, it can direct visitors to exhibit areas related to their personal interests. The trick is to point visitors in the general direction of what they want to see and still allow them to have a sense of discovery—for discovery is what museums and research are all about.

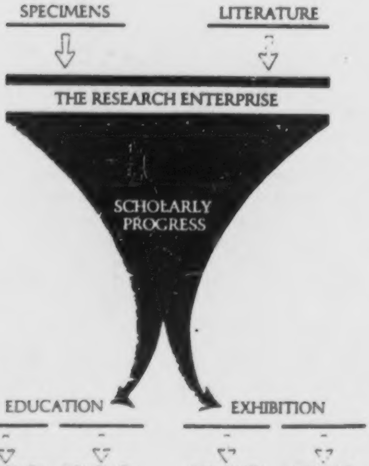
An orientation center is being planned at the Field Museum. It will be located adjacent to the main visitor entrance. As visitors enter the museum, they will be directed to the orientation center, where they will be introduced to the total dimensions of the museum. The goal of the center is to tell the remarkable stories behind the collections, their acquisition and their use in research, education and exhibition. Further, it will assist visitors in selecting a tour through the nine acres of exhibit halls. Introduced to the museum by proper signage, information booths and friendly staff, the visitors will feel welcome and comfortable. We hope that what they see and learn and how they feel in the orientation center will make them want to return to the museum again and again.

The specific goals of the orientation center are to:

- foster an awareness of the museum as a center for basic research and for interpretation of that research through exhibits and educational programs;
- increase visitors' understanding of the meaning of natural history;
- provide visitors with a base of knowledge and a sense of involvement that will make the collections on exhibit more approachable and intellectually accessible; and
- give visitors self-directed, thematic guidance to the exhibits.

The Field Museum will be introduced as a broad-based museum specializing in the fields of anthropology, botany, geology and zoology. It is somewhat unusual in that, within the parameters of these four disciplines, it treats the arts, humanities and natural science. Further, it is a museum in which new knowledge is pursued, not merely presented. In this regard the Field is faithful to the historic concept of the museum as a place of contemplation.

Field Museum Flow Chart



The themes to be explored include:

Collections. Objects representative of the museum's four disciplines will be related to specific research projects and exhibition areas. The significance of collection data will be explained.

Research. Topics will include the process of free inquiry, discovery, prediction and implication for worldwide impact; current research efforts and findings; and the role that collections play in the research process.

Interpretation. Basic concepts as they are demonstrated through exhibits will be introduced. This theme may include a unit on the development of exhibitions so that visitors can learn something about the process.

Interactive modules will assist visitors in planning their visits within self-imposed time frames. The final objective is to develop an itinerary that is tailored yet general enough to allow for the rewards of exploration and discovery.

An evaluation process is being considered for the center to determine visitor profiles and levels of interest. Periodically, studies in the exhibit areas will help us ascertain if the orientation center is effective in meeting its stated goals.

As the financial burden of maintaining collections and performing research has increased, the financial pressures on museums as a whole have also increased. All museums must develop new sources of revenue or expand support from existing sources. And that includes the development of major support from the local sector.

To generate this support, research museums must explain their full mission to the public in such a way as to increase public recognition of the special responsibilities that research museums carry. Enormous opportunities have obviously been lost, and the decision to explain the role of research in museums has been long in coming. The media cannot develop the image of the museum as a research institution; museums must do that for themselves. Cultivating recognition from the local community will be a slow process, but it is absolutely necessary if basic research is to remain a museum function.

At the same time, all museums have sought to increase the accessibility of their facilities, their programs and their staff positions. Now attention is turning to intellectual accessibility, with the translations by educators and exhibit designers of the work of the curator-scholars providing the bridge between exploration and public understanding. It is our good fortune that the financial imperative for research museums to explain their research function to the public and the desire of all museums to be more intellectually accessible are mutually supportive goals.

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1. So states the opening sentence of Carl E. Guthe, *So You Want a Good Museum: A Guide to the Management of Small Museums* (Washington, D. C.: AAM, 1973), p. 1.

2. Research is not mentioned as a function of museums in the official definition of a museum developed for the purposes of the accreditation program of the AAM. It states, "A museum is defined as an organized and permanent nonprofit institution, essentially educational or aesthetic in purpose, with professional staff, which owns and utilizes tangible objects, cares for them and exhibits them to the public on some regular schedule." H. J. Swinney, ed., *Professional Standards for Museum Accreditation: The Handbook of the Accreditation Program of the American Association of Museums* (Washington, D. C.: AAM, 1978), p. 9.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

STATEMENT OF THOMAS M. DONAHUE, CHAIRMAN, SPACE SCIENCES BOARD, NATIONAL RESEARCH COUNCIL

Senator GARN. Next is Mr. Thomas M. Donahue of the Space Science Board of the National Research Council.

Mr. DONAHUE. I wish to thank you, Mr. Chairman, for allowing me to appear at these hearings and comment on the fiscal year 1985 budget request for NASA on behalf of the Space Science Board of the National Research Council of which I am the chairman. I also want to support your candidacy for flight on the Shuttle.

Senator GARN. I will accept any help I can get.

Mr. DONAHUE. Be glad to help. With your permission, I shall briefly summarize the high points of the full statement that we have submitted.

Senator GARN. Thank you.

Mr. DONAHUE. There are some very good things for space science in the proposed budget, particularly new starts for the upper atmosphere research satellite, the Mars Geoscience/Climatology Orbiter, and Scatterometer. The only regret we have to voice here in connection with the new starts is the failure of NASA to ask for the establishment of the level of line item for planetary observers. It is in the budget for research and data analysis and advanced technology development; the usual regrettable shortfalls appear.

It seems always to take a struggle to maintain an adequate level for these funds which are the source of support for the research groups at universities, centers, institutes, and industrial research laboratories—the groups which NASA depend on to supply the ideas and instruments for its missions and to analyze the data that they produce.

Once again this year we see a refusal by the Administration to recognize the authorizations the Congress has made in the previous year's appropriation in R&A funding, particularly for solar system exploration. NASA is planning to start such missions but is providing little or no ATE funding for them. This seems to me is not exactly wise.

One consequence of the very low frequency of flight opportunities in recent years and the VR&T shortfalls has been a sapping of the vitality of space research groups at universities.

In this regard, I echo the testimony of Mr. Rohrbaugh of the AIAA for the need for NASA to learn how to use the Shuttle effectively to do science.

Last year, NASA and the Space Science Board put together a committee chaired jointly by NASA's chief scientists and myself to recommend remedies, and we did so. Unfortunately, two of our three recommendations for short-term relief—$11 million a year for laboratory equipment and an enhanced effort in data analysis at universities—has not been implemented in this budget. I find this a little strange.

NASA and we agree at a high level about the gravity of the problem and propose a solution, but the agency doesn't implement our recommendations. There is $150 million requested for the space station this year, the first installment on a $10 billion or $20 billion project, but not $15 million or so to rescue university research groups who will be needed some day to use the space station.

As we go into the era of large long-lived observatory science, such as the Space Telescope—AXAF, SIRTF—all should understand the magnitude of the investment applied in the form of mission operations, data management and analysis, maintenance, and replacement instrument development.

In the space station concept, there is a very large commitment of that sort. The budget implications for the future are so serious that it is imperative that we all be as creative as possible during the planning phase of these missions so as to minimize their impact on other NASA programs.

As for the space station, if you agree with the administration that it should be developed and if its usefullness to users such as space science is to be maximized, it is essential that the final design, especially of the platforms, be delayed as long as possible so that NASA can iterate requirements and configurations with such groups as its own Space and Earth Science Advisory Committee and with the committees of the Space Science Board.

It is also essential that users such as science be represented effectively in the administrative structure at NASA charged with developing the space station.

Finally, it will be important to protect the space science and other NASA programs from shortfalls in reimbursibles in space station overruns in the decade to come. I have discussed these issues with NASA management, and I am impressed with their commitment to see the space station go ahead in a way that will be beneficial and not detrimental to science. It is important their attitude be replicated throughout the agency.

Thank you, Mr. Chairman.

Senator GARN. Thank you. In your attachment entitled, "Direction of the Development of a Civil Space Station," you note, and I quote, "Pressure to build a space station is not coming from potential users such as space science and applications." Could you expand for me and the subcommittee on that statement and also, briefly summarize some of the other concerns you have about the space station program as now proposed?

Mr. DONAHUE. The basis for that statement, which I made before another committee of this body last year before the President came to a decision on the part of the administration to go forward with the space station was based particularly on my perception and the perception of the Space Science Board of the requirements for space science.

We found that we have a large number of what we consider very important, high-priority, first-order science missions to be done that have been laid out for a long time, something like 40 such missions. Since they were planned for the Shuttle and the upper stages associated with the Shuttle, it is only natural that they can be launched and serviced by the Shuttle and don't need a space station to launch them or to take care of them. Since these seem to us to be very high priority missions, our attitude was, as far as we are concerned, we would be satisfied if we had the Shuttle in the upper stages like the wide body Centaur and get on with the programs that we have laid out.

We didn't see in the documents with which we had been presented by NASA in support of the space station that were proposing any other missions in space science. They had not identified other missions in spite of a year or so of intensive work involving some seven contractors.

So our statement at that time was, we don't see that this thing is an enterprise that seems to be driven by other requirements, requirements or means other than those of space science applications. It is not that we can't use the thing if it is developed, there are many ways that we can already see the space station could be useful—developing very large antenna rays, for example; general enterprises that can't be carried out with just one Shuttle manifest. That is the background for that statement.

Senator GARN. Thank you very much.

Mr. DONAHUE. Thank you.

[The statement follows:]

STATEMENT OF THOMAS M. DONAHUE, CHAIRMAN, SPACE SCIENCE BOARD, NATIONAL RESEARCH COUNCIL

FISCAL YEAR 1985 NASA BUDGET REQUEST

It is a pleasure for me to appear here today to discuss scientific issues in the space program, particularly as they are raised in the fiscal year 1985 budget request of NASA. I am sure you know, but for the record I shall repeat, that I represent the Space Science Board (SSB) of the National Research Council. The Board has been charged by the Council to monitor the health of space science. This responsibility is expressed through the formulation of space research strategies which are developed by our committees for the guidance of NASA in mission selection, in assessing the responsiveness to those strategies of the science content of those missions, in gauging the quality of NASA's long-range planning, and in judging the adequacy of the supporting elements of the U.S. space science programs at universities, centers, and institutes.

The overriding issues for science in FY 1985 are the request for a start on the space station and the impact that initiative will have on space science. The Senate Subcommittee on Science, Technology and Space held a hearing on space station development last fall, and I had the privilege of testifying at that time. I refer you to that testimony, a copy of which is attached. If the Congress agrees with the Administration and authorizes NASA to proceed with the construction of this facility, the Board will cooperate in every way within its power to maximize the usefulness of the space station to science. We have expressed this determination to Mr. Beggs, and I am pleased with the level of mutual understanding that seems to exist between us on this issue. Of course, as I also said in my testimony, we are concerned lest the bad experience space science has had in coexisting with the space shuttle development program be repeated with the space station. A large number of excellent potential space science missions have already been developed in concept that are responsive to the strategies of the Board and its committees that do not need the space station for their implementation. If the nation wishes to continue to be in the forefront of science in space, then means will have to be found to launch such science missions at a reasonable rate with existing spacecraft while the space station is being prepared. If further delays in starting and orbiting high priority missions during space station development are added to those already imposed while we waited for the shuttle and its upper stages, space science will be left in atrophy. I understand that there is an agreement within the Administration providing for a real growth, after minimal allowance for inflation, of one percent in the NASA budget in each of the next five years. I hope that if such a "cap" is placed on the NASA budget, it not be done in such a way as to prevent space science from expanding to the level of activity implied by the establishment of the space station. Possibly the greatest budgetary uncertainty during the next few years is the level of reimbursement which will actually be realized from space transportation. I hope that space science will be protected from unforeseen fluctuations in those reimbursables, for they could be quite large. Since there is nothing crucial about the date at which the space station is to be deployed, there is no reason not to ask it to absorb such shortfalls. Care must be taken as the space station system is being defined and after it is in place to accommodate science missions that, because of the orbit needed or other requirements, do not lend themselves readily to close support by the space station. We are pleased with the willingness expressed by NASA to make usefulness to science a major factor in designing the space station. The recent formation of a space station task force of the NASA Space and Earth Science Advisory

Committee is a positive step. So also would be a decision to ask the Goddard Space Flight Center and the Jet Propulsion Laboratory, as representatives of the space science component of NASA, to play an integral, high level role in planning the space station It would also seem to be wise for NASA to establish some high level administrative apparatus at headquarters to represent science in space station planning and to guard against the kind of deterioration of NASA's science mission that occurred during the decade of shuttle development.

Turning now to the specifics of the FY 1985 request in space science, I am pleased to see the proposed new starts: the Upper Atmosphere Research Satellite (UARS), the Mars Geoscience Climatology Orbiter (MGCO) and the Scatterometer. In most respects this is an encouraging budget for space science. A lot of people within NASA and elsewhere in the administration including, in particular, Dr. Keyworth and his staff deserve commendation for their success in producing real growth in NASA's space science program during the past couple of years. The strong support of this and other committees of Congress has also been essential in supporting these initiatives as well as correcting deficiencies in the budget request when they have existed. It has been a long while since three new starts were requested. We have waited a long time to see the UARS get underway. It is indeed time that we obtain a global inventory of trace gases in the upper atmosphere simultaneously with measurements of wind and temperature which are needed to understand the impact of life processes on the surface and in the waters of the Earth on the upper atmosphere. Flying a scatterometer on the Naval Observatory Satellite System (NOSS) will provide us with some of the data we shall need to understand the global circulation of the ocean. I hope that NASA follows through promptly to complete the job by coming forward with proposals to start TOPEX, the ocean topography experiment, and GRM, the Geodynamics Research Mission.

The appearance of the request for the Mars Geoscience Climatology Orbiter (MGCO) is a welcome sign of NASA's responsiveness to the Solar System Exploration Committee (SSEC) report. However, I note with regret that the Administration has failed to respond to a key element in the recommendations of the SSEC--that this mission be the first in a level-of-effort series called the Planetary Observers. Stability and affordability were what the SSEC was trying to bring to the base program in planetary studies. In doing so, it was being responsive to advice from members of Congress and from the Science Advisor. There is risk involved in transforming the way we do planetary space science from reliance on elaborate comprehensive missions to smaller, more affordable ones. Because of the limited scope of these smaller missions, it is essential that each one be a part of a well-planned, continuing sequence. Commitment to a level-of-effort funding is necessary to provide stability, flexibility, and economy in this new way of doing business. I think that the SSEC did a responsible and careful job. It is a pity that its recommendations are not being followed. Although these remarks have been directed toward the Planetary Observer portion of the Planetary Exploration core program, it is important to keep in mind that they are only a part of that planetary program. There are also missions that require the new Mariner Mark II spacecraft being defined by the Jet Propulsion Laboratory. Also there is the essential Research and Analysis (R&A) and Missions Operating and Data Analysis (MO&DA) infrastructure. All are components of this minimal program defined by SSEC. A core program implies the existence of a more elaborate, augmented enterprise that will be needed from time to time.

In astronomy and astrophysics I fear that we are seeing the effects of the Hubble Space Telescope (ST) overruns on other programs. The proposed funding for the Advanced X-Ray Astronomy Facility (AXAF) experiments is welcome but probably not adequate. No funds are requested to start work in defining the Space Infra-Red Telescope Facility (SIRTF), and the Solar Optical Telescope (SOT) is still delayed. The delay and cost overruns in the ST program were caused predominantly by management shortcomings--not by scientific or even technological impediments. Unfortunately, the penalty for the delays is being paid in part by the science programs of the future.

On the other hand, those technical problems that confronted the Space Telescope last year seem to be behind us. There seem to be no "show stoppers" ahead of the Optical Telescope Assembly (OTA). The Fine Guidance System works, the mirror can be cleaned, the latches have been fixed, and it still looks as though the OTA will emerge from Perkin Elmer in time to meet the revised schedule. Scientists close to the project are very pleased with the technical excellence being realized by this splendid instrument. If no serious problems develop during integration and verification at Lockheed, the telescope should be ready for launch at the revised date. Obviously, there is no guarantee that further delays won't occur. For example, although NASA management seems quite firm about meeting the schedule and holding to the present budget, many of us are uneasy about the prospects for a flawless experience at Lockheed. Obviously, the ST will remain as a threat to the stability of the space science program at least until it has been launched. NASA must guard against allowing this preoccupation with management problems to cause it to forget that the purpose of this mission is to do science. It is most important that the Space Telescope Science Institute (STScI) be ready to adequately support the operation of the facility once it begins to operate. I have great confidence in the competence and dedication of the Institute staff to do so if NASA provides them with the means in a timely fashion. When this great and costly instrument becomes ready, we should be in a position to exploit its capabilities from the very beginning. This is a good time to evaluate the proper scope of activities projected at the Institute. NASA has asked the Space Science Board to carry out such an evaluation. Our Committee on Space Astronomy and Astrophysics is in the process of setting up an ad hoc panel under Professor Arthur Code of the University of Wisconsin to carry out the study this summer. The Institute director and the AURA (the Association of Universities for Research in Astronomy) is supportive of this initiative. This seems like a prudent thing for NASA and the astronomy community to endorse at this time, and I commend them for their foresight. I also hope that plans are being developed for a preventive maintenance program of the telescope after it becomes operational. In so doing we will be able to prevent problems from developing that might take months or years to fix without such a program. Furthermore, the practical experience gained in servicing the instrument periodically ought to prove useful if an emergency should develop.

The ST and the STScI will profoundly change the future course of American astronomy in a way not fully perceived by the astronomical community. With the establishment of a permanent observatory in space space astronomy will achieve a level of maturity that will require more effective coordination between the space-based and ground-based organizations. Other observatories, such as the Gamma Ray Observatory (GRO), AXAF, and SIRTF, will follow. The institutional and fiscal implications of establishing these observatories and their attendant operational, support, and maintenance apparatus need to be examined and understood. It follows that there may be a need for an advisory structure that can communicate to all agencies concerned with astronomy as space activities become a larger and larger fraction of the total effort. The definition of this structure will require careful study by the various agencies, the Congress, and the National Research Council. I am well aware of the concern of your subcommittee in this regard and am eager to remain in contact with you and your staff while it is being discussed.

Last year when I testified before the authorization committees of both Houses I commented on the sensitivity NASA was showing toward the problem of the poor health of University space science research groups. As a reflection of that sensitivity, a committee on NASA-University relations was formed, chaired jointly by the chief scientist of NASA, Dr. McDonald, and myself, and consisting of representatives of the university community and NASA. This committee recommended several emergency measures to NASA management in order to provide immediate succor to these university groups. One of these recommendations has been adopted. It is for the establishment of NASA Graduate Student traineeships. Unfortunately, the enhancement of data analysis funding at universities for science missions now existing or already finished that the committee recommended has not been requested. A third recommendation was for an 11 million dollar annual commitment for laboratory equipment needed to end the state of obsolescence of that equipment in many university research laboratories. This state has developed over the years because of the erosion that has taken place in supporting research and technology (now research and analysis, or R&A) funding. A serious state has been allowed to develop in our university laboratories. The budget request does not contain a line for funds needed to respond to the third recommendation either.

Erosion of research and analysis funding would have been much more serious than it has been if the Congress had not taken the initiative to increase funding above the Administration requests. Again this year the R&A requests fall short of the levels established by Congress last year. This is perplexing in view of the increased level of science activity implied by the new starts. Such an increase needs an enhancement of R&A support, not a decrease. The most serious question I must raise concerning this budget request is whether the provision of R&A, MO&DA, and Advanced Technology Development (ATD) infrastructure in it is sufficient to support the level of mission activity implied by the present request for new starts and realistic plans for the future.

The increases requested for shuttle payload development, for the suborbital program, and Explorers are laudable especially if they reflect a preoccupation with increasing the rate at which flight opportunities will become available for small, university-sized payloads. The questions remain, however: Do the plans for using these funds really provide for carrying through on the experience with Space Lab I, and are they directed toward solving the problem of increasing the ability of the shuttle to accommodate these small payloads at a high frequency of flight? It is important that we exploit our experience with the space shuttle to develop an adequate mix of shuttle payloads from large facilities to small PI class experiments. Otherwise, the support from university research groups that NASA needs for its large missions cannot be assured.

One area of space research that traditionally has been among the strongest is that of solar and space plasma physics, including solar-terrestrial research. During the past few years a series of management reorganizations at NASA have left the disciplines less than adequately represented. These science programs seem to have suffered accordingly. This year's budget request includes several welcome harbingers of change. One is the UARS initiative. Another is the appointment of a vigorous and effective discipline chief. The third is the energetic promotion and planning for an International Solar-Tererestrial Program (ISTP) involving the United States, Europe and Japan. ISTP would include elements of the Origin of Plasmas in the Earth's Neighborhood (OPEN) mission for which we have been waiting so long. At the same time, I do not believe that this budget represents continuaty of this program through adequate funding for payload development. I also note an effective decrease in R&A requested for solar and space plasma physics. The concern of the Space Science Board for this discipline is expressed in the charge given to our Committee on Solar and Space Physics--to conduct a programmatic priority study of the sort already carried out by the Astronomy Survey Committee and the Solar System Exploration Committee. We shall be pleased to share the findings of that study with you when it has been completed and would welcome any suggestions from you or your staff on questions it ought to consider.

In summary, let me repeat how pleased I am to find three important new initiatives in space science in the budget request. I have also identified the problems I see with the budget request, without making specific recommendations. I would be glad to do so in response to questions. Finally, I emphasize the hope that we shall proceed with care if we go forward with plans to establish a space station--care for the current and future health of the space science programs.

DIRECTION OF THE DEVELOPMENT OF A CIVIL SPACE STATION

Thank you Mr. Chairman for your invitation to testify on the space station issue. My name is Thomas M. Donahue; I am on the faculty of the University of Michigan and am the current chairman of the Space Science Board of the National Academy of Sciences. It is the ongoing task of the Board to provide independent advice and guidance to the conduct and substance of the U.S. civil space science program and the major technical initiatives to implement such programs.

The Space Science Board recently produced two brief reports dealing with space science issues raised by NASA's proposal to establish a space station in a low inclination orbit by the end of this century. I have attached these reports to this statement along with the transmittal letter that I sent with them to the administrator of NASA, Mr. Beggs. So here I shall only very briefly summarize the content of these reports. The first report addresses the question of whether the space station now proposed would significantly enhance the usefulness of space science missions it proposes to support above the level they would achieve if the present space transportation system alone were available to launch and support them. In view of the fact that the mission set in question was designed around expendable launch vehicles, the shuttle and appropriate upper stages now being developed, it is hardly surprising that the answer turned out to be negative. It is important to note that the Board addressed the question of how much we need this particular space station, 40 percent of whose projected activity is stated to be support of a particular set of space science missions. We explicitly remarked that we could envision other kinds of space stations, designed to do other things—such as providing an assembly base for construction of large structures or new kinds of spacecraft on orbit that might be very useful to space science missions of the future. We suggested that we might be able to get enthusiastic about such a space station. However, it is only fair to say that I doubt that these kinds of activities alone could ever come close to justifying entirely the establishment of such a space station. Indeed, we also pointed out in our second report our conviction that in defining the properties of a space station one should have very clearly in mind all of the major functions it is supposed to perform. To be explicit, if—sooner or later—the space station is supposed to provide a base for expeditions to Mars or the Moon, then that activity will so overwhelm the support of the platforms and free flyers of space science and applications that one should pay attention from the beginning to the requirements of the more ambitious application of the space station. I am not saying that the proposed space station will not serve well as a step toward that ultimate space station. I only point out that there is no evidence that the issue is being addressed or that we understand the trade offs.

You might ask why we insist on evaluating the space station in terms of our science objectives and their present set of missions and do not consider revising them radically in view of the possibility that novel ways of configuring and servicing missions from a space station might be developed and provide us with exciting new capabilities. The answer is partly that we are not being challenged to do that with the present proposal. It is also partly that our agenda is very full with the present set of missions. We are very excited about their potential to provide us with fundamental insights into how the universe began, insights into fundamental unified theories of physics, into questions about how the planets and the Sun developed and life began, into how life on Earth impacts and is impacted by the atmosphere, the oceans, and the solid planet. We consider this to be a very worthy agenda, we consider the technical means now becoming available adequate to allow us to get on with it and, especially after our experience with long, frustrating delays waiting for that system to be put in place, we are very resistant to risking another wait for another promised enhancement in supporting technology that, in our opinion, offers no apparent advantage over the shuttle system for science. That technology ought to grow in response to experience and evolving requirements and not be artificially introduced in such a way as to drive its uses.

It is significant that the pressure to build a space station is not coming from potential users such as space science and applications. Those who are pressing for a space station are making a laudable effort to involve those users in defining the characteristics of the space station so that it will be useful to them. This is in contrast with what happened when these communities were presented with the space shuttle and spacelab, two previous systems imposed on them. But, nevertheless, I have to emphasize the importance of the observation that technical means should develop in response to user needs and not the other way around.

It is often said that our response to the proposed space station is a consequence of our fears that science budgets will suffer from competition with Office of Space Flight budgets if the nation should embark on a new and ambitious space station program. This is not an accurate characterization of our position. A very simple examination of the record will reveal that the budget for space science has remained fairly close to a fixed fraction of the total NASA budget through all of the twenty-five year history of the space program. During the years of the Apollo era, this fraction served to support a vigorous and productive science program. During the years of the shuttle, it has not. The reason is that during the sixties and early seventies, the science budget was being used to build spacecraft, to launch them, and to finance the science groups that used them. During much of the last ten years, approved space science missions have been waiting on the ground to be launched because of delays in getting the shuttle operational and the unavailability of expendable launch vehicles. Thus, the budget has been used to support the infrastructure of engineers and technicians that must be maintained to take care of those missions until they are launched and not to prepare and fly new missions. The rate of launching space science missions has dropped from five or six per year in the late sixties to about one per year now. Therefore, we have warned that if the nation wishes to continue to do space science while a space station is being developed the means to launch and support space science missions and to support the space science community will need to be preserved concurrently. Nevertheless, the budgetary impact may occur. We are watching with great interest to see what is in the agency's FY 1985 budget request. If the budget implications of large sums for the space station and for the consequences of administrative defects in developing the space telescope are failure to propose new starts for the Upper Atmosphere Research Satellite, for the Mars Geoscience Climatology Orbiter (the first planetary mission in the Planetary Observer series recommended by the Solar System Exploration Committee), or the various measures needed to bring emergency aid to failing university space science research groups, the conclusion will be obvious. Early this year, after the magnitude of the problem with the space telescope development was revealed, the Board expressed to NASA and to the Congress our hope that the penalty for administrative failures would not be assessed against science. It is already clear however that the Advanced X-ray Astronomy Facility and the Solar Optical Telescope are being delayed. Personally, I am apprehensive that delays also will be imposed on some or all of these other science missions that I have mentioned. If this turns out to be the case and at the same time funds are requested for a major new initiative for other elements of the space program, then a strong statement will have been made concerning priorities. If this is, indeed, the direction in which the nation desires to take its space program, that is its perogative. Whatever the decision, it is the duty of the Space Science Board to determine the scientific consequences.

Let me return for a moment to the statements the Board has published on the space station. We recognize that space science and applications are not the only ends of the space program—not by any means. We have not taken a position for or against the space station, although many read our position to be negative. We hold that the decision to build a space station will be made for reasons other than its usefulness to space science and applications alone. We also recognize that a healthy space agency is necessary for a healthy space science program, and that permission to embark on an ambitious new program such as the space station may be necessary—or at least very salubrious—for the health of NASA. With these factors in mind, we were reluctant to produce the judgment we did on the need of space science for this space station. However, the reason the Academies have established advisory bodies, such as the Space Science Board and the Space Applications Board, is to provide clear, independent advice on scientific and technical issues to those in government who must come to decisions on those issues. A crucial question is whether science can get along without the proposed space station, and how well it can get along. These questions are very different from the question of whether we could use the space station if it were to be built, or could use some kind of space station which may not even be the one proposed. Earth sciences, for example, need observatories in high inclination, sometimes sun-synchronous, orbits. Such platforms and free flyers could benefit from services rendered by a manned space station in a high inclination orbit. But they could also be serviced from a space shuttle sortie in such a high inclination orbit. Thus, to say that these observatories would be benefited merely because they are part of an overall plan, labelled a space station plan, that does not provide for the matching manned space station element would be an empty endorsement. It is one that we chose not to make.

I hope that these remarks, coupled with the documents I have submitted, will clarify some of the issues you must confront or provoke questions that I shall be pleased to try to answer.

LETTER FROM THOMAS M. DONAHUE

September 9, 1983

Mr. James Beggs
Administrator
National Aeronautics and Space
  Administration
Washington, D.C. 20546

Dear Jim:

Last September the Space Science Board agreed to work with NASA in determining the technical capabilities a space station should have in order to address effectively the scientific objectives of the various space science disciplines. During the past year, the Board and its committees have had frequent interactions with the NASA Space Station Task Force, led by John Hodge, in fulfilling that commitment. We have been very favorably impressed by the careful consultation with the community of potential space station users that NASA has maintained during this exercise. In due time, we plan to transmit to you formally the results of the past year exercises by the Board and its committees.

Mr. Hodge has briefed the Board concerning the characteristics of the space station now being proposed by NASA. In the reports enclosed with this letter, the Board addresses two separate issues. The first issue is the degree to which the space station now being considered will be required in order to reach the objectives of the Space Science disciplines during the next twenty years. This evaluation, in the Board's opinion, must be made in the light of the adequacy of the presently available space transportation system to meet space science needs without augmentation by the proposed space station capabilities. Our finding is that present systems are adequate to these needs. Therefore, on the issue of meeting the needs of space science, our recommendation would be to use the space shuttle, together with requisite upper stages, maneuvering and propulsion systems for missions to be flown during this century. To meet longer range science objectives, a space station might prove to be very useful in various ways if it were suitably designed. The Board would be happy to work with you to define such a space station if you proceed with plans for it.

As we pointed out in our letter of September 13, 1982, the Board agrees with you that the question of whether to go forward with a space station is not apt to be made on the grounds of its usefulness to space science and applications alone. Thus, the report entitled "Space Science Board Assessment of the Scientific Value of a Space Station" should not be regarded as establishing a Board position on the question of whether the nation should or should not now or in the future develop such a space station. On the other hand, the Board has considered some additional issues that lie within its competence. These have to do with conditions that should exist as any space station is being developed and after it becomes operational, if a healthy and vigorous space science program is to be maintained concurrently. A discussion of these issues is the content of our second report, "Space Science in a Space Station Era" which is also being forwarded to you with this letter.

Sincerely,

Thomas M. Donahue
Chairman

SPACE SCIENCE BOARD ASSESSMENT OF THE SCIENTIFIC VALUE OF A SPACE STATION

During the past year, the Space Science Board has examined the question of what space systems are required to launch and support adequately the space science missions designed to attain the high priority science objectives identified by the Board and its committees. These missions are very numerous, challenging, and exciting. However, the rate at which they are launched would have to increase significantly above the current rate if all of the missions needed to fulfill this program are to be flown during the next two decades. The means of launching and tending them is now available or being developed in the form of expendable launch vehicles and the space shuttle, augmented as required by adequate high energy upper stages. One reason for the present slow pace is the delay in bringing the shuttle and its upper stages to full operational status. Another is that we have not yet learned how to use the shuttle efficiently and effectively as a manned orbiting laboratory. The Space Science Board urges that the present launch systems be fully and flexibly exploited and adequate resources be brought to bear so that the stated objectives of space science can be reached in a timely fashion. The results of following this course should be a rich harvest of discoveries and insights in all disciplines of space science.

The Space Science Board has carefully examined the proposal by NASA for a manned space station in low Earth orbit designed to engage in a number of major activities. A significant portion of these activities involves support of space science missions. The Board has also examined the set of specific missions proposed for implementation from the space station system during the years 1991-2000. It has found that few of these missions would acquire significant scientific or technical enhancement by virtue of being implemented from this space station. In view of this and the adequacy of the present space transportation system for the purposes of space science, the Board sees no scientific need for this space station during the next twenty years.

In the longer term, the Space Science Board sees the possibility that a suitably designed space station could serve as a very useful facility in support of future space science activities. Such a space station could provide means for erecting and fabricating large and novel structures in space, and for servicing, fueling, and retrieval of payloads in orbit. If NASA wishes to develop plans for such an ambitious and technically demanding space station for the next century, the Space Science Board would be pleased to work with NASA in defining the properties of such a space station.

SPACE SCIENCE IN A SPACE STATION ERA

In a recent statement entitled, "Space Science Board Assessment of the Scientific Value of a Space Station," the Space Science Board has addressed the issue of the space science need for a space station. It found no need for a space station to support missions addressing high priority science issues for the next two decades. On the other hand, it found that a suitable space station could offer important services to space science in the more distant future.

The Space Science Board realizes that the nation may decide to commit itself to the deployment of a space station in support of needs and objectives other than or in addition to those of space science alone. The characteristics of such a space station should be carefully determined to conform to the principal activity that it is intended to support. For example, it is not obvious that a space station optimized as a transportation node for travel between the Earth and other solar system objects would also be an entirely suitable platform from which to launch and support science and applications missions. Whatever the eventual properties of such a space station, there will probably be a set of high priority science missions that require orbits and operational support for maximum effectiveness other than those available from that station. If a space station program should be undertaken and it is meant to be useful to space science, the Space Science Board urges that the means to initiate and operate space science missions in a timely fashion and in reasonable accord with priority ordering of those missions be maintained. Ordering of missions would then be determined by scientific priority rather than the nature of the launch or support system required. The Board also urges that the scientific program be structured so as to be protected from delay in space station development or changes in its capability.

The Board also wishes to make the following specific recommendations and observations.

Scientific instruments that can be deployed in orbits compatible with space station orbits should be flown in optimal scientific orbits and on separate platforms if that is necessary to preserve them from contamination, interference, and degradation of pointing stability and control that may be associated with the manned modules.

If the space station is designed to provide a servicing capability beyond that provided by the shuttle, that capability should allow retrieval of instruments from a wide variety of orbits.

The deployment of a space station designed in part to support space science implies an increase in the level of space science activity above that presently planned. If such a space station is to be utilized effectively, the space station system should be accessible and affordable for scientific use, and there should be a real increase in the level of support for that activity.

A commitment by the nation to long duration human space flight, whether in Earth orbit or beyond, calls for the establishment of a facility for space biological and medical research on the effects on individuals of very long exposure to the "low g" environment. In this sense, the relationship of the life sciences to a space station is a special one.

Thus, a manned space station could eventually provide significant opportunities for a number of disciplines in space science provided there is a commensurate increase in the total level of space science activity. Realization of those opportunities would depend on the extent to which the capability to carry out space science research is kept viable, important experimental and theoretical activity is continued, and new endeavors are initiated while the space station is being developed. After the space station becomes operational, realization of those opportunities would depend on the provision of a sufficient number and variety of flight opportunities, many involving unmanned space craft and flight to regions of space near the Earth and further out in the solar system at distances and locations inaccessible to a manned platform.

STATEMENT OF THEODORE SIMPSON, VICE CHAIRMAN, RESEARCH AND DEVELOPMENT COMMITTEE, IEEE

Senator GARN. Next, Mr. Theodore Simpson, vice chairman, Research and Development Committee (IEEE).

Please proceed.

Mr. SIMPSON. Thank you, Mr. Chairman. I am Ted Simpson. I am vice chairman of the IEEE Research and Development Committee. I will give you briefly our views on the NASA budget.

The IEEE is the world's largest technical society, approximately 250,000 members worldwide, of which about 200,000 reside in the United States.

With regard to the NSF budget, Mr. Chairman, I would like to say we support the budget as is, and we hope there are no further cuts in it.

With regard to the NASA budget, we are basically pleased with that as well. We are particularly happy with three new starts in the fiscal year 1985 budget—the space station, the Mars Geoscience/Climatology Orbiter, and upper atmosphere research satellite.

We believe the space station is an idea whose time has come and is the next major project for manned space flight.

The Mars Geoscience/Climatology Oribiter is a second new start in the planetary area and, therefore, is going to help reinvigorate that area.

An upper atmosphere satellite will provide additional information about the atmosphere.

The one thing we would like you to add money for is funding for the advanced communications technology satellite. We support not only ground-based testing but space-based testing as well. We would like you to add $90 million to further that space testing.

I am accompanied today by Richard Gould. Earlier this year he gave testimony before the Senate Subcommittee on Technology and Space on the ACTS program. If you have any questions on ACTS, Mr. Gould will be glad to answer them.

Senator GARN. Thank you. Your testimony on ACTS is quite convincing. It seems to me if we are to pursue the program at all, then flight testing is essential, but you do or do not believe the $40 million added in the House is sufficient? When you said $90 million, I am wondering what base you are starting from?

Mr. SIMPSON. That is what NASA originally asked for last year and that was cut out. As long as you can get the program underway, we think that is a good thing.

Senator GARN. $40 million added in the House authorizing committee, is that sufficient?

Mr. SIMPSON. I believe the number is somewhere between $40 million and $50 million. I think the Senate is going to ask for $50 million on the authorizing side.

Mr. GOULD. Thank you, Mr. Chairman. The original amount would have enabled rapid start and the completion of flight program in the originally planned date. The lesser amount will mean a stretchout in the development of the space craft and its flight, but if that has to be, then it is acceptable, although we would have preferred our cash register.

Senator GARN. Thank you very much, gentlemen.

Mr. SIMPSON. Thank you, Senator.

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

STATEMENT OF CHRIS HILL, EXECUTIVE DIRECTOR, UNITED CEREBRAL PALSY ASSOCIATION OF UTAH, ON BEHALF OF CONSORTIUM FOR CITIZENS WITH DEVELOPMENTAL DISABILITIES

Senator GARN. Dr. Chris Hill, executive director, United Cerebral Palsy Association of Utah, on behalf of the Consortium for Citizens with Developmental Disabilities.

Mr. HILL. Let me say hello. I am accompanied by Dr. Clarke Ross of the Cerebral Palsy Local Government Activities Association. I would like to submit my statement from the Consortium for Citizens with Developmental Disabilities in regard to the HUD program. I would like to first of all thank you for the opportunity on behalf of the consortium and our board of directors and citizens and disabled folks in Salt Lake City to appear before you today.

Basically what I would like to talk about is how the program has affected our citizens in Utah and how that translates to disabled folks throughout the country itself. Our program in Utah got started with a board meeting, a meeting with Dr. Ross. We evaluated our program and found out there were, after a survey of the community, our most important need was housing for cerebral palsy and similarly developmentally disabled individuals. There were no beds in the State of Utah for this type of client. They were living in institutional settings, the majority of them.

Thanks to this program, we have been able to apply for funding. As you know, we received, with your support, a grant, 202 loan program last September, for 18 units of housing for the developmentally disabled, specifically cerebral palsied individuals.

What this means is for the first time in our State we are able to provide a quality service for this particular segment of the disabled population. We received some tremendous support from throughout our community and throughout both local government fundings and community development bloc grant program. Through that program, we most recently received $106,000 for this program to complement what HUD has done for us in the area of improving land and site acquisition. We are building in Salt Lake County both of these facilities.

What it means to the families involved is the fact they are going to be able to live independently and, as you well know in the State of Utah, there is a tremendous value on family living and living close in a community. This accords tremendous opportunity for our clients who are severely disabled but have a tremendous potential to live in the community close to their family and close to that family unit in a very noninstitutional community-based setting.

We have received tremendous response from our clients and families involved. Without advertising at all, we are receiving a tremendous number of individuals who would like to move into this program and, hopefully, move on to less restricted environments than they will be there. This translates in Utah as a tremendous need, but the needs are what I am finding out, similar in other States.

We have just come from our national convention in Atlanta and discussing this with other State affiliates, I find out they are in similar situations and the HUD program has helped them tremendously. Without this HUD program, we would not have an alternative right now for these clients in our State and this would be a similar situation for clients in other States.

Through this program, we have been able to finance and start this. It is unique, especially for cerebral palsied and physically handicapped individuals that we have to get these type of facilities that are accessible and are quality environment because we feel they have a lot to offer.

On behalf of the consortium, I would like to highlight a couple of points we would like to support and recommend to your committee.

First of all, we would like to continue and look for the funding for 14,000 units of housing under the 202 direct loan program in 1985. There has been a tremendous—and we feel very fortunate in our State—there has been a tremendous competition for these dollars, as you know, in the HUD program, specifically in the disabled population, which has been even more intense.

Over the past year, there has been an increase in the number of applications from the disabled community and a decrease in the number of units available. That makes the competition even tougher and makes us really do a tremendous job in what we are doing because we are being scrutinized closely and feel good about the progress we are making, but the competition is tougher and tougher every year, and the clients desire to move and parents' desires to move into less restricted environments, the competition is going to get more intense.

Coming along with the 14,000 units of housing, we also would like to recommend continuation of section 8 subsidies for these programs which make it physically possible for an agency, such as ours, to provide this type of housing.

Another point that we are concerned about is that we retain the 9.25-percent interest rate for 202 programs for fiscal year 1985. It helps facilitate this program and it monetarily advantageous for us to do this.

A third point we are concerned about also is to provide the $6 million for congregate housing services for the programs. Especially with the physically disabled population and other developmental disabilities, the program funding is so critical and the support services, if we are to move to a less restricted environment and provide services for the disabled folks, we have to make sure we don't just provide a facility, but that we provide quality care and training so they become less and less dependent upon us and less of a strain on Government funding.

Another point we are concerned about is that we will be able to retain the $1.9 billion recapture of section 8 under the 202 program also.

A final thing is under this recommendation from the task force is that we would like to limit the housing voucher program for 15,000 units as specificed under Public Law 98–181. We feel these are conservative yet very appropriate recommendations from our agencies. I am not just speaking from United Cerebral but Consortium of Citizens for the Developmental Disabled. It is an exiciting thing for me after we surveyed our community, so often you survey your communities and there is no alternative; you come up with your need and you look down the road and it is 10 years before you can address that need.

In our particular situation, the need was housing. It is not solving all our problems, but it is an opportunity for us to cut down the problem and is a tangible way for us to go about it.

From a personal standpoint, as I met with our board before I left, they recommended I let you know how appreciative we are about the opportunities going to be able to afford to the clients in our community and the families they represent. We do appreciate this opportunity to come speak to you about this program.

Senator GARN. Thank you very much, Dr. Hill. I personally appreciate your testimony and certainly will seriously consider your recommendation. Obviously, I can't make any guarantees, but consider your recommendations for increasing 202 units and attempt to freeze the interest rates as well as to limit the housing voucher program. All of these recommendations, as a matter of fact, are consistent with previous actions of the subcommittee. So we certainly will take a careful look at them.

Also, I want to add, I don't know when in all the years I have been conducting these hearings I have had such precise, direct witnesses all afternoon. You are not even scheduled to be on until 4:40. That is the hazard of public witnesses when you have so many, you almost always get behind. Today I have had to caution no one and tell them they were taking the time of the next person. I don't know if they were tired of listening to my voice, afraid of getting my cold, or what. Nevertheless, the testimony has been impressive by its conciseness.

It reminds me years ago when I was in the insurance business. I tried to teach my agents what was known as the KISS formula—keep it simple, stupid. So today everybody has been very impressive, making their points directly, forcefully, and filled in with the rest of the statement in the record.

You certainly fit that pattern as well. I am proud to have you here as a fellow Utahan. We thank you both very much for being here.

Mr. HILL. I appreciate the opportunity and look forward to seeing you back in our home State.

SUBCOMMITTEE RECESS

Senator GARN. Thank you. The subcommittee will stand in recess until Tuesday, May 8, at 10 a.m., at which time we will hear testimony from additional public witnesses. The subcommittee is recessed.

[Whereupon, at 3:31 p.m. Monday, May 7, the subcommittee was recessed to reconvene at 10 a.m. Tuesday, May 8.]

[CLERK'S NOTE: The following testimony was provided for inclusion in the record:]

STATEMENT OF THE AMERICAN ASSOCIATION OF HOMES FOR THE AGING

Decent and affordable housing for the elderly is a basic necessity that is in desperately short supply. A variety of living arrangements are needed to meet the special physical and social needs of older persons and permit them to live with the highest degree of independence. The American Association of Homes for the Aging (AAHA) strongly believes that providing housing that meets these special needs is both an appropriate and essential element of government policy.

Americans over the age of 65 constitute the fastest growing and one of the most poorly housed segments of our nation's population. More than one in every five American households is elderly or headed by an elderly adult. Nearly 16 percent of all elderly people live on incomes below the nation's poverty level and almost 20 percent occupy dwellings classified as either inadequate or substandard. These trends will certainly be enhanced with the doubling of our aged population over the next quarter century.

The Federal government has traditionally played a major role in meeting the special housing needs of older Americans through a variety of housing construction and finance programs under the Department of Housing and Urban Development (HUD). During fiscal years 1980 through 1982, for example, approximately 250,000 units of elderly housing were constructed under three HUD programs--Public Housing, Section 8 and Section 202--providing an average of 84,000 new units each year. Additional assistance to the elderly was provided under the Section 8 existing housing program and the Congregate Housing Services program.

Since fiscal year 1983, however, no funds have been available for new construction under either the public housing or Section 8 programs. Sufficient funding has been provided for the Section 202 program to support less than 13,000 new units of elderly and handicapped housing each year. No funding has been provided for Congregate Housing Services and the Section 8 existing housing program has been significantly reduced.

President Reagan's fiscal year 1985 budget continues to restrict all new housing construction under HUD to only 10,000 units of Section 202 housing. It further proposes to confine all future direct housing assistance under HUD to housing vouchers, which merely supplement the income of households that are able to find appropriate units within the private rental housing market.

AAHA is deeply concerned with the continued erosion of Federal housing assistance under the Department of Housing and Urban Development. The elimination of federally-financed housing construction and reductions in total housing assistance will serve to enhance current shortages of rental units in most communities and force older persons to compete with younger families for scarce and inappropriate rental housing units. Without adequate housing opportunities, the elderly will continue to be forced into substandard housing or placed in costly nursing facilities.

The federal government must continue to be an active partner with nonprofit organizations and the broader private sector in providing affordable housing that is designed and managed with the unique needs of the elderly in mind. Toward this end, AAHA respectfully submits the following recommendations to the consideration of the Subcommittee on HUD-Independent Agencies and to the Congress.

Section 202 Elderly Housing Loan Program

The most important HUD program from the standpoint of elderly housing is the Section 202 direct loan program. While Section 202 has traditionally represented only a fraction of the housing facilities serving the elderly, it constitutes what we often think of when we refer to "housing for the elderly." The program has set the standards for excellence in housing design, in services and in the quality of life for the elderly and handicapped persons it serves.

The Section 202 program has been one of the federal government's most successful housing initiatives. It has produced high quality, durable housing for the elderly and handicapped in more than 1800 facilities in every part of the nation and in both urban and rural settings. Of all the facilities constructed under Section 202, only one has defaulted on its mortgage obligation to the federal government and few have experienced the financial and management problems that characterized other federal housing programs.

The competition for Section 202 development loans has become increasingly severe, reflecting not only the growing need for assisted elderly housing, but also the lack of alternative financing for facilities serving lower income elderly and handicapped persons. In 1983, HUD approved funding reservations to finance approximately 13,200 units of new Section 202 housing. A similar number of reservations is anticipated in 1984. However, applications for assistance from nonprofit sponsors are expected to exceed by several times the number of units that will be available.

AAHA strongly believes that current levels of program activity under Section 202 should be maintained. It requests that the Subcommittee reject the Administration's proposed reduction in new Section 202 loan assistance in fiscal year 1985. AAHA urges the Subcommittee to appropriate sufficient funds to provide the 14,000 units of new Section 202 housing authorized by Congress in the Housing and Urban-Rural Recovery Act of 1983 (P.L. 98-181).

Section 202 Loan Interest Rate

The Housing and Urban-Rural Recovery Act continued the prior year practice of limiting the Section 202 loan interest rate at no more than 9.25 percent. This limitation applied only to fiscal year 1984 funding. HUD's fiscal year 1985 budget documents indicate that the Department intends to raise the Section 202 rate to 10.3 percent, reflecting expected average Treasury borrowing during 1984. Without congressional action to continue the interest rate limit, it is likely that the Section 202 rate will exceed the 10.3 percent level and will add significantly to the financing cost of new elderly housing facilities.

This rate increase would come at a very critical time for the Section 202 program. HUD has recently published regulations reducing in many market areas the Fair Market Rents (FMR) that serve as a guide for housing development costs. This is the first time since Section 8 began that these rents have been reduced. Rising development costs are already forcing many housing sponsors to exceed area FMR limits by 10 to 20 percent. A recent study found that Section 202 projects in 25 to 30 percent of the market areas of the United States will not be able to be constructed this year without additional funding from sponsors or other non-federal sources. An increase in the loan interest rate next year could further increase costs to the point were development of new elderly and handicapped facilities would be almost impossible in many parts of the nation.

AAHA strongly urges the Subcommittee to continue to limit the Section 202 loan interest rate at 9.25 percent as a condition for funding for the program in its fiscal year 1985 appropriations.

Section 8 Recapture Set Aside

In the fiscal year 1984 HUD-Independent Agencies Appropriation Congress approved language requiring HUD to set aside the first $1.9 billion in recaptured Section 8 subsidy funds for use in conjunction with the Section 202 loan program. This action served to discourage arbitrary cancellation of Section 8 projects and to assure that the authorized annual level of new Section 202 units would actually be funded.

In recent years the annual number of new Section 202 units provided by HUD has been declining below the levels authorized by Congress. The Section 8 subsidy funds that were reserved for use with new projects have been increasingly diverted to supplement prior Section 8 commitments. Without the action taken by the Appropriations committees last year, new Section 202 units during the current fiscal year would fall significantly below the 14,000 unit level approved by Congress.

AAHA urges the Subcommittee to reject HUD's request to eliminate this recapture set-aside and requests that the first $1.9 billion in recaptured Section 8 funds continue to be reserved for use with Section 202 during fiscal year 1985.

Congregate Housing Services

The continuation of the Congregate Housing Services Program is also a major concern of AAHA and the nonprofit housing sponsors that it represents. The program offers the only source of assistance for facilities seeking to provide a supportive environment that permits the frail elderly to continue living independently. The aging of the resident population of most elderly housing facilities presents a growing demand for the supportive services provided through the program.

Unfortunately, HUD has stalled permanent reauthorization of the program for several years pending its study of the program's operation. As a result, few new elderly facilities have received assistance under the program in recent years and nearly 30 facilities that have been assisted (half of those receiving such assistance) face the prospect of having their three-year contracts expire prior to the end of fiscal year 1985.

Given the fact that HUD is obligated to report to Congress on the Congregate Housing Services Program by the end of this year, AAHA believes it imperative that the program continue in operation until Congress has had ample opportunity to review HUD's recommendations and take appropriate action. Allowing funding for the program to lapse could serve to prejudice HUD's report and make it more difficult and more costly to reactivate the program at a later time.

AAHA urges the Subcommittee to provide $6 million during fiscal year 1985 to extend the 29 Congregate Housing Services contracts due to expire prior to the end of fiscal year 1985 and to keep this needed program active until the question of permanent authorization is resolved by the Congress.

Rental Subsidy Assistance

AAHA has strongly supported the Section 8 existing housing rental subsidy program as an effective way of assisting elderly individuals to obtain decent and affordable housing within the private housing market. We regret the significant reduction in assistance under the program in recent years and are particularly concerned with the Reagan Administration's proposal to replace Section 8 with a "full scale" housing voucher program during fiscal year 1985.

AAHA opposes expansion of funding for housing vouchers beyond the 15,000 unit demonstration program authorized in last year's Housing and Urban-Rural Recovery Act. Housing vouchers provide an inadequate instrument for housing policy, particularly as it affects the needs of the elderly. As proposed by the Administration, the vouchers would not provide sufficient subsidy to assure access to higher quality housing, they would no longer require the housing quality and safety standards of the Section 8 program and they would do little to encourage needed new construction and housing rehabilitation. Vouchers would place the elderly in the position of competing with younger families for increasingly scarce and largely inappropriate market rental housing units.

AAHA strongly urges the Subcommittee to limit appropriations for the proposed housing voucher demonstration program to the 15,000 unit level authorized in the 1983 housing legislation and requests that sufficient funding be provided to continue the current level of assistance under the Section 8 existing housing program.

STATEMENT OF MAJ. GEN. FRANCIS S. GREENLIEF (RET.), EXECUTIVE VICE PRESIDENT, NATIONAL GUARD ASSOCIATION OF THE UNITED STATES

Mr. Chairman and members of the subcommittee, I appreciate this opportunity to appear before you to present the views of the National Guard Association of the United States on the Selective Service System.

This Association has consistently supported the decision, made by President Carter in 1979 and confirmed by President Reagan in 1981, to require peacetime draft registration to increase this nation's wartime readiness. Just as consistently, we have opposed those groups and individuals who have attempted to halt registration because, in their view, it is not needed or, based on their figures, it is not working. The dangerous world in which we live demands a Selective Service System which can deliver the first draftee to a military training station within 13 days of a mobilization and as many as 100,000 men within 30 days after mobilization is declared. This minimum demand is currently being met by the existing Selective Service System.

We are told that every day in this nation, 5,000 young men attain age 18. That means that each day, 5,000 young men are required by law to register with the Selective Service System. With 5,000 men entering draft age each day, 365 days each year, there are bound to be some members of that group who do not meet registration deadlines. Some fail to register because of ignorance, some because of negligence, and some because they do not accept the fact that rights of citizenship are only assured by acceptance of the responsibilities of citizenship. Despite the failures that occur, the Selective Service System has achieved 99.3 percent compliance for birth year-groups 1960 through 1964. The most recent birth year-groups 1965 and 1966 are today reported to be at a compliance rate of 96.6 percent. I would suggest that the compliance rates reported indicate that the Selective Service System is a program that is accepted by the people of this nation. And it is a very successful program.

In previous testimony, I have pointed out the fallacy of the statements of those who claim registration is unneeded because the Army does not have the facilities to house and train additional thousands of young men. Persons who make such statements apparently do not understand the training capability inherent in the 12 Army Reserve training divisions. They also may not be aware of the many state-owned Army National Guard camps which are available to this nation during a mobilization emergency.

One of the registration problems which I discussed in last year's testimony was the fact that as many as 200,000 members of the Guard and Reserve forces of this nation were not in compliance with Selective Service registration requirements. These non-registered Guardsmen and Reservists were not making an anti-war or anti-draft statement. Rather, it was apparent that those patriotic young men who had volunteered for military service in the Guard or Reserve did not understand that the law required them to register with Selective Service even though they had already assumed the burden of military service. That situation should not recur in the future because the military enlistment contract, DD Form 4, filled out by non-prior service males now states "This form registers me under the Military Selective Service Act. My name, SSN, date of birth and address may be sent to the Selective Service System for registration/information reporting requirement."

There has been considerable discussion of the feasibility of a check-off box on the Selective Service registration form to allow conscientious objectors to express their opposition to war and the registration process. I am told that during World War II, when 15 million of our citizens served in the armed forces, only 12,000 persons were classified as conscientious objectors. On the other hand, I also understand that as many as 49,000 Americans declared themselves to be conscientious objectors during the peak period of the Vietnam War. Based on those figures, it appears to me that conscientious objection may be a function of the type of war America is faced with. We cannot predict the future and cannot determine what type of war might be imposed on this nation at some future time. The person who might be inclined to check-off a conscientious objector box because he opposes American policy in Central American might feel very differently if an enemy air force was bombing America's cities. If a check-off was established for the conscientious objector, why not one for the disabled? Why not one for our members of the active, Guard and reserve forces who are already serving? In my opinion, the number of check-off boxes that could be added to the Selective Service registration form in an effort to allow all possible preferences to be expressed would make the form a travesty. In any case, check-off on a form would have no status in law since approval of conscientious objector status is made by a board of citizens who review all of the facts and claims presented on a case-by-case basis as part of a draft classification process.

Far more important than arguments about a form is the need to ensure the continued existence of our freedoms as guaranteed by our form of government. I once heard an Army National Guard chaplain say, "To be born free is an accident, to live free is a privilege, to die free is a responsibility." Since the elimination of the draft at the end of the Vietnam War, our ability to rapidly reinforce our military forces has steadily eroded. Although registration has not fully solved that problem, it is certainly a step in the right direction. A viable, functioning Selective Service System will accelerate the process of manning our forces in time of need. However, at the end of fiscal year 1983, the total strength of the Individual Ready Reserve (IRR) of our Army was only 246,000. Of that number, it is estimated that only 70 percent, or 172,000, would actually be available and fit to serve during a national emergency and many of those would not be trained in the combat arms specialties which are immediately needed to fill deploying units or to replace combat casualties. It is estimated that as many as 450,000 trained men would be required to fill units and replace casualties during the critical five- to six-month period while personnel produced by the Selective Service System were undergoing the training required to take up places in fighting units. In order to solve that problem, we must find a way to increase the number of personnel in the IRR to a level sufficient to produce 450,000 trained combat arms fighting men. In the current no-draft environment, the IRR will never achieve the strength levels needed to achieve that goal. For that reason, the National Guard Association strongly supports H.R. 1500, a bill which goes beyond registration. It requires classification and examination of each registrant, and provides for the drafting of up to 200,000 young men each year for a six-month training period in combat arms skills, followed by service for the balance of the military obligation in the Individual Ready Reserve.

Mr. Chairman, we realize that passage of H.R. 1500 is not within the realm of the possible in today's political climate, however, this Association urges your continued support of the Selective Service System and urges full funding of its FY85 budget authorization in order that it can do its job effectively.

Mr. Chairman, thank you for this opportunity to present this testimony in support of a program vital to this nation's wartime needs.

STATEMENT OF THE MORTGAGE BANKERS ASSOCIATION OF AMERICA

In connection with hearings you have scheduled for March 22, 1984, on the FY 1985 budget for the Veterans Administration (VA), the Mortgage Bankers Association of America urges the Subcommittee on HUD-Independent Agencies to provide an adequate appropriation for the VA to continue to operate the VA home loan guaranty program during all of FY 1985. The amount of appropriations necessary to assure that all qualified veterans who will need the VA guaranty to become homeowners during FY 1985 will depend upon VA's use of other non-appropriated sources. The VA has not made its plans for FY 1985 known as yet, but it has indicated that some appropriations will be necessary, and that the need could be as great as $500 million.

The President's FY 1985 Budget, submitted to the Congress on February 1, 1984, indicates that no appropriations would be required to operate the VA home loan guaranty program during FY 1985. However, that budget proposal rested upon an assumption that the VA would discontinue acquiring properties in satisfaction of guaranty claims after default. This change from the traditional and successful way of operating the program was to have gone into effect on March 1, 1984. However, the Administration has not implemented the change, and has stated that the method of satisfying guaranty claims will be studied by an inter-departmental task force.

The budget and appropriations for the VA home loan guaranty programs FY 1985 should not be based upon a proposed change that has been withdrawn for further study. MBA understands that the Congressional Budget Office (CBO) estimates that $128 million in appropriated funds would be needed to operate the program in FY 1985, based on an assumption that the VA can otherwise support the program from non-appropriated sources as it has in recent years. MBA urges that at least the CBO estimate of $128 million be provided.

We would appreciate it very much if this letter could be made a part of the record of the Subcommittee's hearings on VA's FY 1985 Budget.

JOINT STATEMENT OF PAUL S. EGAN, DEPUTY DIRECTOR, NATIONAL LEGISLATIVE COMMISSION, AND ROBERT E. LYNGH, DIRECTOR, NATIONAL VETERANS AFFAIRS AND REHABILITATION COMMISSION, THE AMERICAN LEGION

Mr. Chairman and Members of the Subcommittee:

The American Legion is pleased to have the opportunity to present its views on appropriations for Function 700 (Veterans Benefits and Services) for Fiscal Year 1985.

In its submittal to Congress, the Administration has proposed for the Veterans Administration Budget Authority of $27.2 billion, and Outlays of $26.7 billion. If adopted as proposed, this would be an increase of $900 million for VA, above appropriations for Fiscal Year 1984.

In its Report to the Committee on the Budget, the Committee on Veterans Affairs has proposed Outlays for VA of $27 billion, an increase over the Administration proposal of $353.4 million.

The American Legion wishes to state, in general, its approval of and satisfaction with the Veterans Affairs Committee's approach to funding for veterans programs for Fiscal Year 1985.

To preface the brief remarks we wish to make as to certain items in the funding proposals, the Legion wishes to again make a point it has made before in submissions to the Subcommittee. Representing as we do, 2.6 million veterans who have served in the four American wars of the Twentieth Century, and 1 million women of the Legion's Auxiliary, we must state we are acutely aware of the fiscal constraints that are impacting on the Congress as it strives to provide funding for all the activities and to meet all the responsibilities of the Federal Government. Veterans are taxpayers too, and we realize full well that how Congress and the Administration meet this responsibility may determine the well-being of the nation and all its citizens in the years to come.

We know full well they must be, and we insist that all veterans programs be carefully and tightly managed by the Veterans Administratio that waste, fraud and abuse must be rooted out, and that all VA employees must carry out their duties in a most responsible manner, to conserve as much as possible Federal funds. Through its network of Service Officers, and its Field Representatives, who make regularly scheduled visits to as many as 65 VA medical centers and clinics each year, the Legion attempts to assist the VA to conduct its programs in the most cost-effective manner possible.

However, it must also be said that it has long been the Legion's firm conviction that when the national spending priorities are set, veterans programs should rank second only to national defense. It must be borne in mind that veterans performed exclusively national service. They are men and women who answered the call of the elected government, and defended with arms, the national interest as defined by that government. Veterans programs are, therefore, a total responsibility of the Federal Government. We only ask that Congress keep these things in mind as it considers the allocation of funds for veterans programs.

It is also true that all veterans programs now encompassed in law are viable programs that had a specific reason for adoption when they were established by Congress, and that are now continuing to fulfill the purpose for which they were established.

Proceeding to consideration of the Administration proposals, we will say The American Legion is pleased and grateful for the funding allocations for veterans programs. We believe what the Administration proposes and the adjustments recommended to the Budget Committee by the Veterans Affairs Committee both recognized the need and the justification for the proper funding of veterans programs. The comment we offer is directed to areas of special concern we have identified through our own general oversight of the impact of veterans programs on those they are intended to serve.

DEPARTMENT OF VETERANS BENEFITS

The direct benefit programs administered by VA through the Department of Veterans Benefits would consume 58.7% of the total VA Budget. The pension program is indexed, and its beneficiaries will receive the same COLA, and at the same time as do Social Security beneficiaries.

What we have identified in the Budget proposal that does give rise to concern is proposed personnel adjustment downward in the amount of 800 FTEs, which will bring DVB, FTE strength to 13,500. This loss is superimposed on previous year losses of 398 in FY 83 and 136 in FY 84, for a total FTE loss through FY 1985 of 1,334. We must advise the Subcommittee that we cannot but be concerned at the effect of these losses on delivery of services to VA beneficiaries. Consistent and persistent reduction of personnel will inevitably impact on the ability of Regional Office staffs to complete action on cases and disburse benefits. Our concern is projected from the standpoint that VA beneficiaries are either the service disabled, their survivors, or the aged and infirm seeking pensions - all are persons who very much need the benefits they are seeking, many on an urgent basis.

In justifying these reductions, VA management speaks of reduced personnel in Loan Guaranty sections; we all know the loan guaranty program is once more busy, following the end of the worst effects of the recession. Management speaks of reduction of those in education and training programs; we respond that while it is true the number of enrollees is reduced, the complexity of cases, for a variety of reasons, has increased, thus requiring more man hours per case. Delays in this category delay subsistence allowances which can force students out of school. And reference is made to effecting reductions in supervisory personnel and increased productivity. Believe us when we say the Legion is all for economy of personnel in management and for maximum productivity by all Federal employees. However, a certain minimum of personnel is needed to properly process cases, without delay-causing errors that have to be corrected; and productivity can only be used as a relative guide when considering the volume of paper work that must be done in the processing of a single case for award of benefits.

We believe the Subcommittee should press for precise data and information from the agency before effecting further loss of field personnel in DVB.

In regard to this general subject, which is a matter of serious concern to the Legion, we believe we were advised the Administrator will in fact undertake a scientific study of work production levels in DVB field offices, perhaps in response to the same concerns we have here expressed. We commend the Administrator for this effort, and we urge the Subcommittee to avail itself of the results of the study.

EMERGENCY VETERANS JOB TRAINING

Under the item Emergency Veterans Job Training, the Administration proposed no funding for FY 1985, whereas the Veterans Affairs Committee recommends the appropriation of $75 million plus any unspent portion of the $150 million appropriated in FY 1984. The American Legion has to support the higher figure. While the nation has witnessed a rather dramatic recovery from perhaps the most serious recession since World War II, it is incorrect to suggest there are no longer any remaining economically depressed areas of the country or any veterans in those areas desirous of utilizing the retraining program.

There are enough veterans applying for the Jobs Training Program to lead one to reasonably conclude that the purposes for which the program was established have not been eliminated. Until the program has had an opportunity to become fully operational and adequately promoted in the private sector, it will not be possible to make an accurate assessment of whether or not it is needed. And as the recovery from recession continues, in concert with the promotion of this program, more and more employers can be expected to come forward and take advantage of a subsidy for assisting veterans by training them. The objective is to reduce the number of unemployed veterans, mostly from the Vietnam Era.

DEPARTMENT OF MEDICINE AND SURGERY

Including all of those programs and activities that fall under the general headingof medical care in the Budget Message, and are administered by the Department of Medicine and Surgery, there is requested for FY 1985, more than $9 billion, representing 35.2% of the total VA Budget. This is a projected increase of more than $560 million. We believe it represents a visible acknowledgment of and commitment to the provision of a program of high quality medical care for the nation's veterans. Having said that, we hasten to add that the VA medical care program, as huge and complex as it is, continues to have many problems that must be addressed now and in the years immediately ahead as the nation confronts a veteran population of 28 million, and a WW II veteran population of more than 10 million, now at an average age in excess of 62 years.

The Budget Message projects an FTE increase for DM&S of 2,924 to 193,321. This is the third successive year of FTE increase for DM&S. The American Legion applauds, and is grateful for these increases, and for those who question the ever increasing number of medical personnel, we have the answer.

The fact is that VA operates the largest comprehensive health care program in the nation. It is also a given fact that medical care is labor intensive. Based on our monitoring of the Department of Medicine and Surgery, which we do through our field service, which site visits more than 65 VA Medical Centers each year, we can attest that the practice of modern medicine on this scale requires every one of the personnel assigned, and still we find spot situations where there are serious shortages of needed skilled medical personnel to care for sometimes critically ill veterans. It is also a fact that the staff to patient ratio in tertiary care VA medical centers is lower than that to be found in private sector hospitals, and much lower than will be found in university hospitals.

VA is projecting a level figure for treatment of inpatients, and an increase of 79,000 outpatient visits to a total for FY 1985, of 18,692,000. We believe this is a realistic projection of what is actually happening in the system. While more veterans are presenting themselves for treatment, inpatient episodes of acute care are shorter, and more veterans are being treated and stabilized in outpatient clinics, thus obviating the need for admission. It is clearly understood this is the way to practice modern medicine. It is better for the patient, and more cost effective for the Government. The American Legion encourages and supports this trend. The cautionary note we add is that in our judgment there should be no further reduction of acute care beds within the system. The controlling factors in this regard are that the aging veteran population will experience more health problems - older people always do - and older persons ordinarily pass from an acute episode to the need for long-term care. Thus, what we are saying is that while the need for more long-term care beds in the system is clearly demonstrable, that need does not by itself lead to the conclusion that the need for acute care beds is decreasing.

Medical and Prosthetic Research

The Medical and Prosthetic Research Program in the Department of Medicine and Surgery is a matter of special concern to The American Legion. This is because we are keenly aware of the importance of this element of the triad of the VA health care program: clinical care, education of health manpower and research. None of the three elements can thrive without the presence of the other two.

The value and significance of the VA research program is daily shown through released information about knowledge gained and advances made in medical science and technology, to the benefit, not only of veterans, but of all people. We all know about the two Nobel Laureates from the VA system, who won their prizes in 1977. The ongoing importance of the work being done is further shown by a recent VA news release describing a new diagnostic technique developed at the VAMC Ann Arbor, Michigan, that may eliminate the need for open heart surgery for as many as a quarter of those who are now processed for this type of surgery every year. Here again, it must be said that a development like this benefits not just veterans, but all peoples everywhere.

A program of this value most certainly needs to be encouraged and strengthened. The Administration proposal would increase research funds by $20 million and increase research personnel by 155, to 4,595 FTEs. Because the research budget was so severely underfunded for several years, we applaud this increase, both in funds and in needed personnel. We hope this trend upward will continue in future budget years. The Federal Government could not spend any of its funds any more wisely than on a vigorous and viable VA research program, that benefits the entire American people.

Geriatric Research Education and Clinical Centers (GRECCS)

We are concerned about the fact we do not identify any funds in the VA Budget for further expansion of the GRECC program. Public Law 96-330, Veterans' Administration Health Care Amendments of 1980, approved August 26, 1980, authorized the establishment of seven GRECCS in addition to the eight then functioning. In FY 1984, VA asked for and received funding to estabish two additional GRECCS. At that time it was explained to us that VA would request funding for two additional GRECCS each year until the seven authorized were operating, for a total of 15, as authorized by PL 96-330. Apparently that is not going to happen, if we read the Budget Message correctly. We believe that any further delay in establishing the authorized GRECCS will be unfortunate. These centers of excellence are doing extremely valuable work in all three fields of clinical care, education of health professionals in aspects of geriatric medicine, and in basic research on such conditions as various forms of cancer and Alzheimer's Disease. We can tell you that with the nation's aging population, and increased longevity, there is a desperate need for more knowledge about Alzheimer's Disease. With encouragement and needed funding there is a possibility for VA research to lead the field in this particular disease, before it becomes a health problem of epidemic proportions.

We would hope the Subcommittee would adjust the VA Budget to include funds for, and instructions to VA to proceed to establish another one or two GRECCS during FY 1985.

Grants for Construction of State Extended Care Facilities

The Budget Message projects outlays of $18 million for Grants for Construction of State Extended Care Facilities. The American Legion wishes to be clearly identified as totally supportive of this appropriation. We are informed there is now a backlog of requests for such grants in excess of $80 million. This indicates the various States are moving very positively to make provision for their aging veteran populations, a fact that is most commendable. It deserves the full support and encouragement of the Federal Government. As we move into the period of an aging veteran population that will be with the nation for the foreseeable future - 5.5 million Korean veterans are now at an average age of 55, and 9.5 million Vietnam Era veterans are already past the average age of 32 - the States can and will be of major assistance to the Federal Government in caring for this population through Soldiers' Homes, and extended care facilities. This will materially ease the pressure on the resources of VA, and is a most cost-effective way for the Federal Government to meet its obligation to its veterans.

Grants to the Republic of the Philippines

The Budget Message identifies $500 thousand as a grant to the Veterans Memorial Hospital in Manila. This grant has been made by the United States consistently since the end of WW II. The Veterans Memorial Hospital cares for many Filipino veterans who served in the Allied cause during WW II. There is certainly an obligation by our country to continue to show our gratitude and concern for them. The American Legion has always supported this grant, and continues to do so.

REALLOCATION OF SURPLUS READJUSTMENT COUNSELING CONTRACT FUNDS

Mr. Chairman, we would like to comment on a portion of the Committee on Veterans Affairs' report to the Budget Committee concerning the proposed budget for FY 1985 dealing with the reallocation of surplus readjustment counseling contract funds.

Language contained in the report states that in the last three fiscal years, the Veterans Administration has not been able to obligate most of the funds earmarked for the Vietnam Veterans Readjustment Counseling contract program. And, that in recent testimony before the Committee on Veterans Affairs, the Chief Medical Director stated that the VA has experienced difficulty in locating adequate numbers of qualified private sector organizations which could provide such services by contract. Additionally, according to the report, the Chief Medical Director stated that lack of authorized FTEE ceilings has made it impossible to use these funds to establish and staff additional VA operated Vet Centers. The Committee recommended that 220 additional FTEE be allocated to the Readjustment Counseling program, and that the Chief Medical Director take action to use surplus contract program funds to establish additional Vet Centers.

Mr. Chairman, if the Veterans Affairs Committee is satisfied that the surplus of contracting funds is due to a difficulty in locating qualified contract counselors, The American Legion would certainly not offer any objection to the proposed reallocation of funds, with one proviso - that the funds be used only for staffing of the Readjustment Counseling program and the establishment of additional Vet Centers.

We are aware that the existing Vet Centers are continuing to experience increasing work loads due, in a large part, to new Vietnam veteran clients seeking assistance. We also know from our Field Service reports and through conversations and correspondence with Vietnam veterans that there are areas of the country where readjustment couseling services are needed, but are not available.

The American Legion continues to find that the Vet Center program is doing well in accomplishing the purpose for which it was established - to provide readjustment counseling and referral services to those veterans who have not satisfactorily completed post-Vietnam recovery and readjustment processes. Because of the success of this program, The American Legion has totally supported and will continue to support the Vet Center program, for as long as there is a demonstrated need for these important services.

MEDICAL CONSTRUCTION

In the medical construction program, The American Legion wishes to first commend the Administration, and then express a serious concern about at least two instances.

The medical construction program is recommended for the amount of $658 million, an increase of $92 million over the amount requested for FY 1984, which we believe was the highest request on record for this program to that point.

The American Legion has always been supportive of the medical construction program. Through the work of our Field Service, we are aware that the capital plant of the VA health care system is deteriorating. The reasons for this are manifold; one of them being serious underfunding of this program for several years until recently. This means VA is playing catch-up with its capital plant renovation and replacement program. The facilities have aged more while nothing was being done, and costs have escalated. It has been a losing proposition all around. Now, at last, the Government is trying to make up for lost time, and it is costing a lot of money - but it is still a good investment. We have said before, and we say again, the capital plant of the VA system is a multi-billion dollar investment by the Federal Government in the field of health care, and it must not be allowed to deteriorate. There is nothing like it any place else in the world. It is nothing short of an invaluable asset. The American Legion supports the funding request for this program in complete detail.

We do have two particular matters of concern we wish to mention. First is the excision from VA planning of the replacement hospital for Baltimore. This replacement hospital is clearly needed. All one has to do is examine the facilities now available in the State of Maryland and the need is clear to see. The replacement hospital was recognized as needed. Preliminary planning was funded and completed. In fact construction had begun, when the President included the funding for this construction in a rescission message in 1981.

If the replacement hospital is not built, there are going to have to be major expenditures for renovation of existing facilities in the Baltimore area. Renovating existing outdated facilities, in this instance, is not a wise expenditure of Federal funds. The wise course would be to complete the replacement hospital. The American Legion hopes the Subcommittee will give this serious consideration.

The other specific construction item we wish to bring to the Subcommittee's special attention is the plan for the Philadelphia VAMC. The story of this item is a long and complicated one which we will not recite here in detail, though we can provide detail if asked to do so, since the Legion has been involved in this entire matter for the past eight years. These eight years were consumed in planning, discussing and arguing, with everything being delayed, and nothing being done. And now there are no funds in the FY 1985 Budget Message for the Philadelphia VAMC.

What is needed there is a multiple project of a clinical addition, a nursing home care unit and a parking facility. All of these needs are urgent because they have been long delayed - and the fault for the delay attaches to everyone who has been involved, in both the Executive and Legislative Branches.

Philadelphia is a tertiary care facility in one of the most intensely populated urban areas in the nation. In its present condition, it is a glaring example of how not to provide high quality sophisticated health care in a population center. The conditions under which the staff has to work and patients have to be treated are deplorable. We are sure the Government would never point to Philadelphia as an example of how it is meeting its obligation to the nation's veterans.

In an extremely crowded land area, the City of Philadelphia has donated land to the Federal Government for the project. If the project is not funded and begun, the City will reclaim the land at the end of 1986. If that is allowed to happen we have no idea how the needed modifications and additions will ever be accomplished.

In today's dollars, we understand the entire project will cost some $183 million. That is a lot of money, but it would not have cost so much if it had been done several years ago, as it should have been. Our recommendation to the Subcommittee is that funding be included in FY 1985 for completion of the entire project. The thing to do is to put up the money and get the project completed now, before it becomes even more costly, or worse yet, becomes impossible of accomplishment. We are sure the Congressional representatives from the Philadelphia area can support the information and recommendation we have presented here.

NEED FOR FUNDING FOR A NEW VISITORS CENTER AT ARLINGTON NATIONAL CEMETERY

Before concluding this statement, Mr. Chairman, we beg leave to mention one other item that relates indirectly to veterans, but that falls under the jurisdiction of this Subcommittee.

We refer to the pressing need for a new Visitors Center at Arlington National Cemetery.

Since the burial of the Kennedy brothers at Arlington, and with the heightened awareness of the sacrifice demanded by the nation of its citizens in war, there has developed increasing interest in Arlington National Cemetery by those Americans who travel here to visit the Capital of their nation.

The current visitor level at Arlington on an annual basis has reached 3.5 million, and it continues to increase. The present visitors center is a temporary one that is totally inadequate in every respect including sanitary facilities and parking. Additionally, the current level of 17 funerals per day at Arlington, under present circumstances must pass through the visitors center on the way from the chapel to gravesite. This is most inappropriate, aside from the added pedestrian and vehicle congestion.

Department of Army has developed a plan to build a new and adequate Visitors Center, including parking facilities, at a cost of $17.1 million. The problem is that for the past several years, the Office of Management and Budget has repeatedly deleted this item from the HUD Independent Agencies Budget.

We are sure this OMB action is a cost saving measure. But as a matter of fact it is not saving any money. Even today, with the inflation level eased, construction costs continue to increase. The permanent Visitors Center at Arlington must be built. The Government has a direct and immediate obligation to its citizens to facilitate their desire to visit their national shrines. The proper thing to do is to go ahead and build the Visitors Center at the cost of $17 million and get it over with. It is a one-time expenditure. It is not going to cost less, but rather it will cost more the longer it is delayed. OMB's action is a classic case of false economy.

The American Legion petitions the Subcommittee to include the necessary amount of $17.1 million for the Visitors Center at Arlington in the FY 1985 Appropriations Act.

Mr. Chairman, that concludes our statement, and we once more thank the Subcommittee for the opportunity to present our views.

STATEMENT OF JOHN C. GERARD, WASHINGTON REPRESENTATIVE, NATIONAL FIRE PROTECTION ASSOCIATION

The National Fire Protection Association (NFPA), founded in 1896, is a non-profit, technical and educational membership organization. It has remained the principal public advocate for fire safety since its inception. The Association's membership of over 32,000 is drawn from the many disciplines involved in and concerned about the national fire problem. NFPA is not a trade or industry association. No one group or interest is dominant. The only common membership denominator is a concern about fire safety. Members include fire service personnel; fire marshals; electrical inspectors and city managers; architects, engineers and educators; health care facility operators; and similar groups from commerce, industry, insurance; as well as federal, state and local governments. The NFPA is a founding member of the Joint Council of National Fire Service Organizations (JCNFSO).

One of the principal functions of NFPA is the development of more than 200 consensus codes and standards related to fire protection. Some of the codes include the Life Safety Code, the National Electrical Code and the National Fuel Gas Code. Typical of the subjects covered by our standards are flammable liquids, sprinkler systems and the installation of other fire protection equipment. We also develop standards used for fire apparatus, firefighter safety and professional qualifications. NFPA has many other functions including public education, technical advisory services, research and development, as well as data collection and analysis.

Since its inception in 1896, NFPA has been a consistent and often outspoken public advocate for fire safety. In this role, the Assocation was an active participant in the National Commission on Fire Prevention and Control. That Commission investigated and identified the fire problem in the United States and made a series of recommendations which we have continuously supported. Two of those recommendations, enacted in 1974, continue to serve this country in an exemplary fashion. They are the United States Fire Administration and the National Fire Academy.

The NFPA has closely monitored the work of these two activities and has provided constructive testimony at authorization and appropriation hearings regarding their accomplishments. Working together they have provided the catalyst and leadership to assist state and local governments, as well as the private sector, in increasingly effective efforts to solve our Nation's fire problem.

Consistent with our dedication to reducing the human and economic losses caused by fire, we have a vital concern over the funding available through the Federal Emergency Management Agency (FEMA) for the United States Fire Administration and the National Fire Academy. We support, as recommended by General Louis O. Giuffrida, that additional funding be provided to maintain an effective Federal focus on fire.

The National Emergency Training Center (NETC) long ago outgrew its campus in Emmitsburg, MD. In recognition of this, FEMA has located a second site in Carson City, Nevada. This is an essential addition to the facilities available for training the people who in fact mitigate emergencies in this country. NFPA strongly supports this initiative and recommends that Congress appropriate the $3,165,000 needed to occupy the Western site and the $1,771,000 necessary to establish the training programs there. The management of FEMA has assured NFPA that activating NETC-West will not adversely affect the programs at the National Fire Academy in Emmitsburg.

NFPA is encouraged by the evolution in course offerings at the NFA and strongly urges approval of the $1,204,000 which will enable the Academy to offer an additional 203 courses to 8,000 students in the field.

NFPA strongly supports FEMA's request for $2,520,000 to enable the USFA to begin work on a national residential sprinkler program that will be consistent with state-of-the-art technology and current good engineering practices. This program will operate in conjunction with the private sector with the goal of a fire safe American home. We are also supportive of the request for an additional $1 million for the Community Volunteer Fire Prevention Program. These programs develop a merger of leadership between Federal, state and local governments and the private sector. They follow in the footsteps and tradition of those FEMA Smoke Detector programs that have helped reduce the life loss due to fire in the United States by 20-25% over the past 10 years.

Finally, we wish to commend General Giuffrida and his staff for their work in establishing the Integrated Emergency Management System (IEMS) so as to bring about a coordinated, predictable and effective response to any emergency regardless of its nature. Such a system is the very core of effective emergency management. FEMA's budget must reflect the additional funds necessary to implement this concept.

In summary, the NFPA supports the addition to FEMA's budget of $3,165,000 to occupy the site for NETC West and $1,771,000 to establish the program there. We suppport the $2,520,000 for a residential sprinkler program, $1 million for the Community Volunteer Fire Prevention Program and an additional $1,204,000 for the NFA field courses.

The HUD-Independent Agencies Subcommittee, Senate Appropriations Committee, can rest assured that the USFA and the NFA are exemplary Federal programs. The ratio of results achieved to dollars spent is truly impressive and is an example for all agencies and departments.

STATEMENT OF DR. HOWARD D. MEHLINGER, DIRECTOR OF CENTER FOR EXCELLENCE IN EDUCATION, INDIANA UNIVERSITY

Mr. Chairman and Members of the Committee, I am Dr. Howard Mehlinger, Director of the Center for Excellence in Education at Indiana University. As a representative of our President, Dr. John W. Ryan, I would like to address the need for improved mathematics and science education and the unique response of Indiana University in its establishment of the Center for Excellence in Education.

A series of recent reports, including the National Commission on Excellence in Education, the Task Force on Education for Economic Growth, the National Science Board Commission on Precollege Education in Mathematics, Sciences, and Technology, and the DOD-University Forum Working Group on Engineering and Science Education, together confirm and reaffirm that there is at present a dire need for a radical national commitment to revitalize and improve the quality and the level of math and science education in our primary and secondary schools. Without this commitment, our nation will be weakened by pervasive scientific illiteracy and by a critical shortage of teachers, scientists and engineers.

This shortage of quality teachers, scientists and engineers will affect our capacity to improve and modernize our technological base, and to compete in the international market place with industrial, commercial and technological products. It will, likewise, limit the ability of those entrusted with the defense of our nation to design, produce and utilize the tools necessary to defending our national security. Moreover, as the level of technology and the rapid communication of information advances, everyone - scientist, businessman and laborer alike - will need to develop computer-based technology and telecommunications skills in order to be able to function in the economy of the globally-interconnected information age. The Task Force on Education for Economic Growth has said:

> Individuals in our society who do not possess the levels of skill, literacy and training essential to this new era will be effectively disenfranchised, not simply from the material rewards that accompany competent performance, but also from the chance to participate in our national life.

The National Science Board echoes this claim when it states:

> We must return to the basics, but the "basics" of the 21st century are not reading, writing and arithmetic. They include communication and higher problem solving skills, and scientific and technological literacy - the thinking tools that allow us to understand the technological world around us.

The commitment needed to revitalize math and science education must begin in our primary and secondary schools because the quality and quantity of scientists and engineers graduating from colleges and universities depends upon the strength and the breadth of the math and science education students receive before they undertake higher education. This is precisely where the basic skills discussed in these reports are or are not taught and developed. This effort will require the development of new curricula, instructional methods, and administrative practices.

In order to meet this need for improved and expanded math, and science instruction, Indiana University, one of our nation's finest public institutions of higher education, is establishing a National Center for Excellence in Education. The Center is an integrated effort utilizing the resources of every aspect of the University -- the College of Arts and Sciences, the Departments of Computer-Sciences and Telecommunications, the School of Business, the School of Library and Information Sciences, the School of Public and Environmental Affairs, an array of language and area studies programs, and the School of Education -- to exploit existing and emerging technologies in order to adapt and modernize school curricula, instructional methods, and education management practices.

The Center for Excellence in Education at Indiana University will serve as a national resource to:

(1) conduct research in the development of innovative instructional methods, and curricula,

(2) foster integration of new interactive computer and telecommunications technology into the educational process,

(3) provide educational materials and training for teachers and administrators; and

(4) provide an active demonstrative model for creative cooperative partnerships in education involving schools, universities, business, industry, and every level of government.

To again quote the Task Force on Education for Economic Growth:

> Mobilizing the education system to teach new skills, so that new generations reach the high general level of education on which sustained economic growth depends, will require new partnerships among all those who have a stake in education and economic growth... It's time not to leave education to educators, job training to businesses, and unemployment worries to labor unions - but to bring all these people together to design programs that are realistic in educational atmosphere and effective in an economic atmosphere.

Indiana University, with its eight-campus system, reaches out with its resources to teach, to do basic and applied research, to develop programs and to provide consultation services to serve almost every locality in the State of Indiana. The establishment of the Indiana Higher Education Telecommunications System has already created a unique network of links between colleges and universities, industrial plants, public primary and secondary schools, hospitals and agricultural resource centers in order to make these resources more accessible to every aspect of daily life in Indiana.

Indiana University has the program and the expertise to address the national need for improved math and science education and is calling upon every member of the cooperative partnership between institutions of primary, secondary and higher education, business and industry, and local, state, and the federal government to provide a share of the resources needed to realize the full capacity of the Center for Excellence in Education.

In the consideration of FY 84 funding for the National Science Foundation's Precollege Science and Mathematics Education Program, the Senate Appropriations Committee Report (98-152) stressed the importance of such cooperative partnerships when it stated:

> The Committee is particularly interested in establishing a partnership program for education with the Federal Government participating with private business, state governments, and educational institutions to improve the quality of science and mathematics education. The National Science Foundation should give special attention to this kind of program.

I am providing two copies of the Prospectus for the Center for Excellence in Education. We would be most pleased to provide any additional information the Committee may need. The budget attached shows that $42.3 million is needed to establish the Center along with an additional $44.4 million for operating expenses through FY 1989. The State of Indiana is contributing between 6 and 7 million dollars each year for a total of $44.4 through FY 1989 to meet these operating expenses. Indiana University is contributing a $15 million facility to house the programs and activities of the Center. This facility will need to be redesigned to meet the special demands of creating and implementing new curricula and instructional methods utilizing extensive computer technology and telecommunications equipment. Indiana University is asking Congress to provide $10 million in grant support for the development of the Center facility and its program design. Alongside these funds, Indiana University is seeking from private sources $17.3 million toward the acquisition of equipment and the renovation of the Center as well as toward sponsorship of its many programs.

Not only are we confident this Center will effectively produce solutions to the challenging problem confronting science and mathematics education today; we have specifically designed the Center and its model programs so that they can be replicated in other states and communities.

I would like to thank the Committee for this opportunity to present testimony.

Projected Budget

CENTER FOR EXCELLENCE IN EDUCATION

CAPITAL BUDGET	FY 84	FY 85	FY 86	FY 87	FY 88	FY 89	Total
FACILITIES							
State/IU	15,000,000						15,000,000
Federal		4,000,000	4,000,000	2,000,000			10,000,000
Private		3,000,000	3,000,000	1,500,000			7,500,000
	15,000,000	7,000,000	7,000,000	3,500,000			32,500,000
EQUIPMENT							
Private		800,000	2,000,000	2,000,000			4,800,000
ENDOWMENT							
Private		1,000,000	2,000,000	2,000,000			5,000,000
TOTAL/YEAR	15,000,000	8,800,000	11,000,000	7,500,000			42,300,000

OPERATING BUDGET	FY 84	FY 85	FY 86	FY 87	FY 88	FY 89	Total
State/IU*	6,000,000	6,300,000	6,615,000	6,945,750	7,293,037	7,657,689	40,811,476
Program Funds**	500,000	500,000	500,000	500,000	250,000	250,000	2,500,000
Endowment Income			80,000	240,000	400,000	400,000	1,120,000
TOTAL/YEAR	6,500,000	6,800,000	7,195,000	7,685,750	7,943,037	8,307,689	44,431,476
GRAND TOTAL							86,731,476

* Assumes 5% growth

** Exclusive of federal grants and contracts

STATEMENT OF THE AMERICAN SOCIETY FOR MICROBIOLOGY

The Public and Scientific Affairs Board (PSAB) of the American Society for Microbiology (ASM) wishes to submit for your consideration the following comments on the Fiscal Year (FY) 1985 budget for the National Science Foundation (NSF).

The ASM is the largest single biological life science organization in the world with an active membership of over 31,000. Many of these individuals are engaged in biological research and a sizable number are recipients of awards administered by the NSF. A large number of areas are represented in their interests, including molecular genetics, photosynthesis, nitrogen fixation, regulation of gene expression, immunology, ecology and others. Our comments are directed primarily to funding for research and training conducted by the NSF Directorate for Biological , Behavioral and Social Sciences (BBS) and proposed amendments to the National Science Foundation Act of 1950.

The Administration has proposed a level of spending of about $204 million for the biological sciences in its FY 1985 budget request for the NSF. This represents an increase of approximately 12% over the projected FY 1984 expenditure. The PSAB supports this increase as a positive step toward fulfilling NSF's mission to support basic research in biology. We believe, however, that seen in a historical perspective, it is a relatively small step towards the restoration of the proper role of the NSF in the support of basic biological research.

The seriousness of the situation is illustrated by the fact that the budget for research in biology at the NSF has remained level between 1978 and 1983 in terms of 1972 constant dollars. This represents a considerable setback if you consider the extraordinary growth of biological research during that period. Scientific opportunities in biology have increased dramatically as a result of major breakthroughs in molecular genetic techniques. The BBS Directorate has had to make extremely difficult choices between funding even a moderate number of grants and awarding sufficient funds for the carrying out of research projects by investigators. It has had to steer a highly unsatisfactory middle course, as illustrated by the statistics for one of its components, the Physiology, Cellular and Molecular Biology Division (PCM). Between 1978 and 1983 the average award decreased by about 10% in 1972 constant dollars. Over the same interval successful grant applications decreased from about 40% to slightly over 30% of the total applications submitted, Thus, both the dollar value of successful grants and the proportion of successful grants decreased over this period.

In FY 1984 the BBS Directorate has begun to reverse this trend as the result of a 14% increase in the budget for biology. As stated in our letter to Congress last year, this will result in the beginning of the catch-up needed to restore the ability of the NSF to carry out its proper mission. We pointed out last year that a typical 1982 grant paid, at best, for one skilled technician, a few supplies, and no restoration or aquisition of equipment. The FY 1984 increments to the budget are being used, wisely in our opinion, to increase the value of successful grants. Thus, although the dollar value of grants increases by 14% in FY 1984, the number of funded grants increases negligibly from 1,491 to 1,505 for the PCM Division, an increase of only 14 grants. The figures speak of the very large infusion of funds that would be necessary to support a significant number of meritorious research grants at a level sufficient to carry out the work proposed.

While the support for research activities at NSF is at least headed in the right direction, the same cannot be said for the training budget. The FY 1985 proposed budget contains a 3.4% increase for Graduate Research Fellowships NSF-wide. Since the stipends would increase by 10%, this represents a decrease in the number of trainees. This lack of substantial increase in support of graduate and postgraduate training does not allow NSF to address the urgent need for qualified scientists in several important areas of biology. To use microbiology as an appropriate example, the number of new Ph.D.s in this field has remained constant at about 350 per year for the last 15 years. In the same time the demands in areas related to biotechnology have skyrocketed. A recent study by the National Academy of Sciences has shown that over a third of the annually produced Ph.D.s in immunology will be employed by industry. This figure represents the lowest estimate of new jobs created in this field. Similar numbers for other areas of microbiology indicate that the demand will become acute within a short time. In recent years it has been fashionable to conclude that the decreased need for academic personnel could result in an oversupply of Ph.D.s. Whatever the merit of this general perception, it is certainly off the mark in fields of science that have seen rapid academic and industrial development. This country may eventually find itself at a competitive disadvantage with regard to personnel available to fill research positions. For this reason we urge you to consider a substantial supplement to the graduate training budget of the NSF. In the area of microbiology a 15% annual growth seems called for over the next five years. This would result in the doubling of the number of new Ph.D.s in this field supported by NSF.

We take this opportunity to comment on the amendments to the National Science Foundation Act of 1950 regarding the role of the NSF in engineering research as proposed by the House Committee on Science and Technology. As microbiologists we are involved in both basic research and its engineering applications. Biological processes, mostly employing microorganisms, play an increasing role in food production, disposal of wastes, fermentation, and mining of minerals, to name just a few areas. We view with concern the proposed changes because they do not take into account the selective nature of the interface between basic research and its engineering applications. As written the changes call for a pervasive marriage of the two in all activities of NSF. Such a union should not be imposed across-the-board because different areas of basic research ripen at different rates. The time and nature of their applications can often not be foreseen. As an example, the development of genetic engineering came on line through a technological route that could not be predicted as recently as twenty years ago. It is unlikely that this development would have been fostered by a congressional mandate. Thus, the merging of basic research and engineering should be based on specific considerations of the state of development of different fields of science. Inevitably an imposed union will lead to competition for funds, since we have no assurance that monies for new functions will be added to the NSF budget. Should one activity win, it will be at the expense of the other, with consequences that are certain to be unproductive.

We would much prefer a continuation of the present system which deals with specific areas of applications of scientific findings. The NSF has been responsive to the need to foster technology transfer, as seen by the increase in the budget for its engineering directorate. It has demonstrated sensitivity and sophistication in the light of considerable external pressure for expedient but not necessarily appropriate solutions. It should be encouraged to continue along these lines.

We appreciate the opportunity to express our views and stand ready to provide additional information to support our comments.

STATEMENT OF THE NATIONAL INSTITUTE FOR ENTREPRENEURIAL TECHNOLOGY

A thriving system of scientific and engineering research and educational institutions, when encouraged to interface with industry, provides a vital part of the infrastructure needed for economic growth. University/industry linkages play a major role in stimulating rapid transitions from fundamental scientific and engineering research to practical implementations of innovations. Encouraging the formation of such linkages must be a vital element of Federal Government efforts to stimulate a renaissance of our industrial competitiveness on world markets. The National Science Foundation (NSF) has played, and can continue to play, a role in facilitating these linkages through direct and indirect funding programs.

It is widely recognized that corporate return-on-investment calculations will undervalue the benefits derived from basic and applied research. No individual firm can capture all of these benefits for itself. Investment levels which may be rational for individual companies, however, are not necessarily rational for the country. The challenges presented by Japanese and European technology on world markets highlight the importance of stimulating new partnerships between the elements of our national science and technology system.

The NSF Industry/University Cooperative Research Centers and Cooperative Research Projects programs, in the Division of Industrial Science and Technology (ISTI), are excellent examples of how direct funding programs can stimulate linkages. These programs are leveraging private-sector funding for basic and advanced research. This benefits American companies which require knowledge and highly educated employees to develop new products and manufacturing processes. It benefits universities by providing new sources capital of for researchers and students. At the same time the inclusion of program evaluations as on-going components of program management, have contributed greatly to our knowledge of the innovation process and to more effective Federal Government roles in that process.

Without Federal seed money. this synergism would likely not have occurred. Increased funding should be provided to expand ISTI programs so that they may fine-tune their existing operations on the basis of program evaluations and explore alternative models for encouraging industry/university linkages.

NSF can also stimulate better university-industry relations through its Small Business Innovation Research (SBIR) Program. This program, the model for P.L. 97-219, is making a major contribution to the formation and growth of our country's high-technology industries.

We urge the Committee to increase the funding for ISTI by $3.15 million, $1 million each for Industry/University Cooperative Research Projects, the Industry/University Cooperative Research Centers Program, and Productivity Improvement Research. These funds should be used to explore new models and to fund projects and centers designed to speed the transition from academia to commercialization in supercomupters and biotechnology and to conduct additional research on problems of innovation in automated manufacturing and on the implementation of technological innovations in general. An additional $150,000 should be provided for handling the increased administrative burden that has resulted from proposal pressure on the SBIR program. In addition, we urge report language which would direct NSF to explore partial early payment and other means of enabling start-up firms with limited cash flow to participate in the program.

Direct funding programs alone are not sufficient. The development of thriving high-technology businesses around Palo Alto and Boston indicate the importance of the presence of major science and engineering research universities for the formation and growth of high-technology companies. Survey research sponsored by Congress, Federal agencies, and organizations such as the National Institute for Entrepreneurial Technology repeatedly confirm the importance of the presence of major universities for the formation and growth of high-technology firms. Adequate funding for university science and engineering research and education is a second mechanism for stimulating consulting, internship, licensing, and other university/industry linkages.

Federal funds account for over 66% of all academic R&D and are by far the largest source of R&D funds for almost all academic institutions. Unfortunately, Federal R&D funding for universities is excessively concentrated. As a recent NSF-funded study by Edward Malecki points out, the top 100 academic institutional recipients of Federal R&D funds account for over 82% of total funds going to such institutions. Yet these institutions are located in only 36 states (including the District of Columbia) with 62 of the top 100 in 12 states. Indeed 10 states receive over 56% of Federal R&D obligations for universities.

Such concentration is unfortunate. It inhibits the development of national centers of scientific and engineering research and education in all parts of the United States. Concentration means that technological creativity and innovation is inhibited by the lack of an adequate research and education infrastructure for these activities.

The solution to concentration is not to withdraw funding from existing national centers. Rather, additional funds should be made available to support research and education in order that existing state and regional universities may be upgraded into national centers. Such funding should be provided in a manner which encourages linkages between universities and firms of all sizes.

We urge the Committee to support the NSF request for Centers for Cross-Disciplinary Research in Engineering. We also request that the Committee include language in its report urging NSF to model funding for these Centers on the approach developed by the Industry/University Cooperative Research Centers in order to ensure such centers strive for financial self-sufficiency.

A thriving system of universities -- linked to small, medium, and large companies -- is essential for long-term economic growth. The spirit of inquiry and innovation that such a system creates is a national resource.

STATEMENT OF JAMES G. GREENO, PH.D., PRESIDENT, FEDERATION OF BEHAVIORAL, PSYCHOLOGICAL AND COGNITIVE SCIENCES

I am James G. Greeno, President of the Federation of Behavioral, Psychological, and Cognitive Sciences. The Federation, established in 1980, is a coalition of 11 scientific societies with combined memberships of over 90,000 scientists. The Federation's interests include research on behavioral, psychological and cognitive processes and their physiological bases, including health, education, and human development. Thank you for the opportunity to comment on the FY85 appropriations for the National Science Foundation (NSF).

As scientists, we are pleased with the Administration's active support for the funding of basic research by the Federal government. This is reflected in the request for more than a 14% increase in NSF's Research and Related Activities over FY84 levels. However, we are alarmed by the continued inequity in support for the behavioral and social sciences. Within the Directorate for Biological, Behavioral and Social Sciences (BBS), Information Science funds are increasing by only 8.2% and Behavioral and Neural Sciences by 9.8%.

The increase for Social and Economic Science is 13.8%, but most of that increase is for the support of socioeconomic data bases. These data bases are important and should be supported but, in addition, funds must be provided for individual investigator-initiated proposals, the essential ingredient of science.

Behavioral and Cognitive Sciences

We request that the Committee attend especially to NSF's programs that support basic research in behavioral and cognitive science: Sensory Physiology and Perception, Psychobiology, Memory and Cognitive Process, Social and Developmental Psychology, Linguistics, and Anthropology. In most cases, the requested increases for these important research topics in the

Administration's budget barely meet the anticipated level of inflation. The major exception is an increase for instrumentation in neuroscience. That request is clearly important, but does not provide support for instrumentation in behavioral and cognitive sciences and ignores the need to support individually initiated investigations. The behavioral and cognitive science programs were drastically cut in FY81 and their funding, not adjusted for inflation, remains at or below FY80 levels. At the same time other areas of science have experienced strong and consistent growth in funding for basic research.

We urge the Appropriations Subcommittee on HUD-Independent Agencies to consider and support the funding levels for behavioral and social sciences proposed in the House Authorization Bill (H.R. 4974), which includes an add-on amount of $5 million for the BBS Directorate: $3.6 million for projects in behavioral and social science research, and $1.4 million for information sciences.

The low priority assigned to behavioral and cognitive sciences in the Administration's budget is inconsistent with the nation's needs and the scientific capabilities of the research force in behavioral and cognitive sciences. The nation faces serious difficulties in adjusting to new information technologies in the work place and in finding productive ways to utilize new technologies to increase the productivity of our industrial and educational institutions. Results of research in behavioral and cognitive sciences that are already available should be used more effectively in design of new human-machine systems, development of programs of training and education, and improvement of the organization of human relations in working institutions. For the future, continued improvements in the use and development of technology will require solutions of fundamental scientific problems regarding the nature of human understanding, learning, and motivation. The National Science Foundation's support of basic research on these problems should be accelerated, rather than held back.

The importance and potential contributions of behavioral and cognitive research have been recognized repeatedly in the scientific community and in studies of major national problems. In a briefing prepared by the National Academy of Sciences for the President's Science Adviser, fundamental advances were noted on cognitive processes in understanding language, thinking and learning in mathematics and science, principles of the organization of knowledge and cognitive expertise, and basic processes of perception. A symposium organized by the National Academy of Sciences on Basic Research in Behavioral and Social Sciences, included surveys of significant recent progress in understanding processes of decision and judgment in uncertain situations, the nature of information that determines perception of objects, and the intellectual capabilities of young children. The report of the National Science Board Commission on Education in Mathematics, Science, and Technology includes a survey of important recent research findings relevant to education and technical training, and urges a strong continuing commitment to basic and applied research on processes of learning and teaching.

Recent research has shown ways in which human judgment and decisions are distorted by fundamental misconceptions of the likelihoods of events that are uncertain. These findings provide a basis for developing ways to characterize uncertain situations that could enable policy decisions more in accord with the beliefs and values of individuals and groups.

Using theoretical and empirical research on visual perception, fundamental advances have been made in identifying ways in which the visual system processes physical and neural information to provide information about objects. This work provides impressive new conceptual tools to address long-standing questions about the way in which the mind structures information about objects in the environment. Scientific progress on those problems will contribute critically to the design of computer-based visual displays as we become increasingly dependent on electronic graphics for communication.

Significant progress has been made in developing rigorous theoretical descriptions of thinking processes involved in "intuitive" understanding of language and of events and systems in the environment. These characterizations of the mental models that people use in reasoning provide a basis for more adequate design of technical information systems and of training in the use of technical systems.

Science Education

Mr. Chairman, we wish to commend the leadership role you and this Subcommittee are taking in an area of major concern to us: Science Education. The need for strengthening our nation's educational programs in mathematics, science and technology is broadly recognized. Improved understanding of the processes of problem solving, comprehension, learning, teaching, and testing is needed to guide the development of new educational resources, including effective use of new computational technology in both instruction and testing.

We are concerned that the President's FY85 budget request does not renew a set-aside for teaching and learning research as part of the effort to improve science education. We recommend that this Subcommittee once again take the initiative and renew the set-aside in FY85. The National Science Board Commission on Precollege Education in Mathematics, Science and Technology addressed the need for this research, stating:

> Research into the processes of teaching and learning should be supported with Federal funds at both the basic level and the level of classroom application. This research should further the recent progress in the cognitive sciences, and in particular research projects should investigate the integration of educational technologies into the process of teaching and learning.

Research in cognitive science is not only changing our views of how people learn science and mathematics, but it is also shaping a theory of learning in which content plays a central role. Much of the research provides significant findings of importance for educational practice. Recent information about the sources of difficulty in learning and understanding mathematical, scientific, and technical concepts provide a basis for educational materials and methods that can reach a broader group of students. Research to identify factors contributing to relatively low levels of participation in mathematics and science courses by women and members of minority groups is underway, and has suggested ways in which increased participation can be encouraged.

Research investigating the detailed nature of problem solving has provided significant new information about the cognitive processes and knowledge that are needed to use the formal knowledge of science and mathematics. Typically, in mathematics and science teaching, formulas and computational procedures are explained directly, but use of those formal procedures for solving problems is treated implicitly, using examples but little or no direct instruction about problem-solving methods. Recent findings have shown some of the kinds of knowledge that are required for successful problem-solving, and have provided explicit descriptions of the knowledge relevant to selected domains in science and mathematics.

A predominant current view underlying curriculum design and teaching in science is that student's understanding of scientific concepts is shaped by their instruction. Much care is taken to avoid presenting incorrect or misleading information so students will not need to unlearn incorrect principles or concepts. However, students begin their study with strongly held conceptions of the phenomena that are explained by scientific principles, and their preconceptions are often inconsistent with the principles to be learned. These misconceptions often persist even after a considerable amount of instruction in science. Students may be able to use their formal knowledge to correctly solve textbook problems, but still base their understanding of events of the world on their incorrect preconceptions.

Education for technology must become a concern of our educational process. We need to understand more about the cognitive skills and knowledge that are required for successful performance and understanding in technical domains. There is a need to study how people understand technological systems so that systems can be designed to be comprehensible, and to aid in the design of training for use and maintenance of the systems.

As with any science, research relevant to education in mathematics, science, and technology is a cumulative process that requires continuity of support if it is to maintain a productive level of contribution. Momentum for improving the quality of science education will be greatly diminished without continued support from NSF.

Conclusions

We share with you a strong concern for consistency of funding for science by the Federal government. It is important to the vitality of our universities, to the training of future generations of scientists, and the pursuit of knowledge. Behavioral and social science must not suffer from continual under funding at NSF. We urge this Subcommittee to:

* Add an additional $5 million to the FY85 budget for the Biological, Behavioral and Social Sciences Directorate of NSF.

* Set-aside at least $5 million for teaching and learning research.

Your consideration of these issues is made even more important because of uncertainties about NSF's authorization. Please do not hesitate to call on me or the Federation staff if we can be of further assistance during your deliberations. Thank you.

STATEMENT OF THE SPACE SCIENCE WORKING GROUP, ASSOCIATION OF AMERICAN UNIVERSITIES

Mr. Chairman and Members of the Subcommittee, I am Martin H. Israel, Professor of Physics at Washington University in St. Louis and Associate Director of Washington University's McDonnell Center for the Space Sciences. I submit this statement in my capacity as Chairman of the Space Science Working Group, a consortium of 20 universities involved in NASA's space science programs. The Space Science Working Group is an activity of the Association of American Universities.

This is the third year that the Space Science Working Group has analyzed the proposed NASA budget and come before the Congress to describe the impact of that budget proposal on the nation's space science programs, with particular emphasis on programs at universities. We have been concerned from the first with the general erosion of NASA support for space science at universities. While the precise level of NASA support for university space science is difficult to document, we can say that the most important line item of the budget to the ongoing university programs is Research and Analysis. The Research and Analysis line for Space Science has dropped (in constant 1982 dollars) from about $250 million in the late 1960s to about $150 million in recent years. (Reference, Appendix 2 of the Initial Report of the NASA/University Relations Study Group, July 1983.)

The proper development of our nation's role in space depends upon a healthy university space program. It is university scientists who generate most of the new ideas and concepts for space missions. In an academic environment, they are able to interact with scientists and scholars from other disciplines which results in the incorporation of what we learn in space into our broader intellectual framework and the transfer of ideas from other areas to the benefit of the space program. University scientists also train the next generation of scientists who may enter the space program but who also go into other areas of science and technology. Those who pursue other fields bring with them the ideas and techniques learned from the space program which often drive technological development to benefit other sectors of the economy.

The general erosion of support for basic space science at universities discourages students from staying in the field. Those who do remain in the field are not only faced with uncertain funding from year to year but they must pursue their scientific studies without the benefit of state-of-the-art instrumentation. It is very difficult to develop new generation ideas and concepts in such an environment.

The immediate problem which galvanized the Space Science Working Group to take action two years ago was a proposed NASA budget for FY 1983 that contained drastic cuts for space science, including a 30% cut in Research and Analysis for Planetary Exploration, cutoff of funding for tracking the deep space probes Voyager and Pioneer, and many other severe cutbacks. At that time, the Congress responded by restoring many of the funds which had been proposed for cutback. The space science community well recognizes that this Congressional action, in which this Committee played a role, prevented what would otherwise have been disastrous consequences for the space science programs. However, there was a continuation of the gradual erosion in funding.

A year ago, the proposed budget for fiscal year 1984 was not as alarming as the previous year's proposal, but it again included some serious cutbacks. The Planetary Research and Analysis program was again proposed to have a significant decrease, this time 10%. Again, the Congress restored the missing funds as well as added funds which partially compensated the inflationary loss of constant dollars which had occurred since FY 1981.

This year, the proposed budget for FY 1985 again contains a cut below last year's Congressionally mandated level for Planetary Research and Analysis. When inflation is included, the proposed budget is $8 million short of last year's level. In our view, it is crucial that this $8 million shortfall be restored to the Planetary Exploration program.

Aside from the cut in Planetary Research and Analysis, a superficial look at the proposed NASA space science budget for FY 1985 does not reveal any glaring problems. Indeed this budget includes new starts for three important scientific programs, the Mars Geochemical/Climatology Observer (MGCO), the Upper Atmosphere Research Satellite (UARS), and the Scatterometer experiment. We are very happy to see these programs begin.

But in our view it is essential to look more carefully at the proposed budget and to recognize the items that are missing. The long slow erosion of space science support, to which I referred earlier, is choking off work that should be going on if we are to ensure the continued vitality of the nation's space sciences during the remainder of this century. There are three areas in the proposed space science budget which we believe to be seriously deficient, (1) Supporting Research and Technology (SR&T), a part of the Research and Analysis lines; (2) Advanced Technology Development (ATD), another part of Research and Analysis; and (3) scientific investigation based on the Shuttle and Spacelab. We believe that relatively modest increases in the proposed budgets for these items would have significant benefit for the health of space science, and would begin to reverse the fifteen-year erosion which we have seen in that support.

(1) Supporting Research and Technology includes those parts of the NASA budget which directly support the basic research programs in universities. SR&T includes the development of new instrumentation which will be used in spaceflight, basic research in the space sciences using instruments flown on suborbital vehicles such as high-altitude balloons, and the support of theoretical research. SR&T funds are the cornerstone of NASA support to universities. They are the principal support for graduate student education, for engineering staffs, and for acquisition of general laboratory equipment.

In addition to the $8 million which is needed to bring Planetary SR&T back up to the FY1984 level, we recommend that an additional $5 million be appropriated to begin rebuilding our Planetary research program and to provide the basis for the future lower cost programs envisioned by the report of NASA's Solar System Exploration Committee. (Part of the $5 million is more properly described as Advanced Technology Development, ATD, for the Mariner Mark II spacecraft, but is included here for budgetary convenience.)

For Physics and Astronomy SR&T, we recommend that $6 million be added to maintain the Congressionally mandated increase of last year, and to initiate an astrophysical theory program, which was strongly recommended in the recent report of the Astronomy Survey Committee of the National Academy of Sciences. We also recommend a $1 million addition to the Environmental Observations Space Physics Research and Analysis budget to restore it to the purchasing power of just a few years ago.

In July of last year, the NASA/University Relations Study Group, co-chaired by Dr. Thomas M. Donahue of the University of Michigan and current Chairman of the Space Science Board and Dr. Frank McDonald, NASA Chief Scientist, issued an initial report entitled "The Universities and NASA Space Sciences" in which the unique and vital role which university scientists have played in all phases of the NASA basic space research activities was described.

One problem which the Study Group identified is the obsolescent state of laboratory instrumentation in the universities. Too often we are designing new experiments and training the next generation of scientists and engineers with equipment from a past generation. We concur with the recommendations of the Study Group that $11 million be added to the budget of the Office of Space Science and Applications for the acquisition of new equipment in FY 1985; this would be an important beginning toward replacing and updating our university instrumentation.

The problem of out-dated instrumentation is not unique to NASA-funded research programs at universities. The Departments of Defense and Energy and the National Science Foundation have recognized this problem in their university programs and have provided funds in fiscal years 1984 and 1985 to start to address the needs. We feel it is timely for NASA to do the same. We understand that NASA's first budget submission to the OMB included $11 million for this purpose, however the provision did not survive the budget negotiations.

(2) Advanced Technology Development (ATD) encompasses work in advanced instrumentation and spacecraft design that enables the planning and implementation of future space missions. Without adequate support for these activities, the definition of future missions cannot proceed, even when there are scientific investigations which have been selected for study as a result of evaluation of competitive scientific proposals. There are several programs for which the FY 1985 budget has inadequate or no budget for ATD even though scientists have been selected. These include the OPEN program, which was undertaken at the recommendation of the Space Science Board and is now known as the International Solar Terrestrial Physics (ISTP) program. The ISTP experiments were selected in 1978 and the program is slated for a FY 1986 new start. While $8M are required for ISTP study in FY 1985 and only $2M is in the proposed budget. Similarly, NASA investigations have been selected for participation in chemical release investigations on a DOD satellite, the Combined Chemical Radiation and Release Effects Satellite (CRRES), but inadequate funds for definition of these experiments are included in the budget.

In response to recommendations of the report of the Astronomy Survey Committee, NASA has taken significant steps in the development of two major new astronomical missions that will build on the foundations laid down by the highly successful Einstein Observatory (HEAO-2) and the Infrared Astronomy Satellite (IRAS). These are the Advanced X-ray Astronomy Facility (AXAF) and the Shuttle Infrared Telescope Facility (SIRTF), for which experiment selection is now underway, but inadequate funds are proposed for FY 1985 to carry out the necessary studies. Other National Academy panels have endorsed the Gravity Probe (GP-B) experiment which will provide a key test of Einstein's General Theory of Relativity.

The Space Science Working Group recommends a $20 million increase in NASA's ATD effort, $10 million for ISTP and CRRES and $10 million for the Physics and Astronomy programs.

(3) Shuttle/Spacelab Payload Development -- An essential part of Shuttle's contribution to science was expected to be availability of multiple flight opportunities for both facility-class instruments and relatively inexpensive Principal-Investigator-class experiments. Unfortunately, this promise has not been realized because of inadequate funding of both types of programs. In particular, one element of that program, the facility-class Solar Optical Telescope (SOT) was delayed last year because of Space Telescope problems, and in the proposed FY 1985 budget SOT receives some funding but it is about $12 million short of what is needed for proper development.

Of 29 US principal-investigator-class experiments selected for spacelab in 1978, only three have been funded for full development. We recommend an $8 million increase to augment funding for these experiments, and $5 million to increase funding for the Spartan program which is developing new relatively inexpensive approaches to using shuttle capability for space science experiments.

I have outlined here a substantial list of budget additions which our Space Science Working Group recommends, $76 million in all. I refer you for further details to the statement and budget analysis of our Group which are attached to this statement. These requests were selected from a much longer list in order to pick out the key areas which are needed to revitalize our nation's space science program. We recognize that this is a year in which the Congress is making difficult spending decisions in the face of growing federal deficits and so you will scrutinize carefully any requests for augmentations to the proposed budget. We trust that your scrutiny of NASA's space science budget will convince you that these augmentations are in fact a wise investment in the future of our nation's strength as the world leader in science and in the understanding and utilization of space.

Thank you for the opportunity to submit testimony to this subcommittee.

THE PROPOSED FY 1985 NASA BUDGET AND ITS EFFECT ON UNIVERSITY SPACE SCIENCE

A Statement by the Space Science Working Group**

INTRODUCTION AND OVERVIEW

Basic scientific research provides the foundation of new knowledge, understanding and expertise upon which our technological society is built. Basic scientific research in the United states is carried out predominantly in the universities and national laboratories. It is from these that new knowledge, as well as new generations of scientists and engineers come. In large measure our future leadership and prosperity are tied to the vigor of our research and education today.

Since the late 1970's, the United States' capability for carrying out space research and for training space scientists and engineers has suffered severely as a result of reductions in federal support for basic space science. The numerous and impressive accomplishments of the recent past are the product of research programs begun and people trained one to two decades ago.

Actions by the Congress and the Administration during the past two years indicate a recognition of the critical need to rebuild our nation's capabilities in space science. As a result, the erosion has been stopped and a small but important and encouraging number of new projects begun.

This document represents the results of our analysis of the President's proposed FY 1985 NASA Space Science and Applications budget. We find several positive signs in that budget, but our analysis reveals that little progress and, indeed, some regression, has taken place in those parts of the budget which bear most immediately on our fundamental research capabilities and on the advanced training of scientists.

In this report we concentrate on three specific areas in the proposed Space Science budget which, we will argue, are seriously deficient: 1) Supporting Research and Technology (SR&T); 2) Advanced Technology Development (ATD); and 3) scientific investigations based on the space shuttle and spacelab. By recommending modest augmentations for these activities, we aim to see the nation's basic space science research efforts rebuilt through the SR&T program to prepare for future missions through ATD and to better capitalize on the nation's existing investment in the space shuttle.

**The Space Science Working Group is a consortium of twenty research universities. Its members are concerned about the health of the U.S. space science program, particularly university-based space science research. For more information, contact the Association of American Universities, Suite 730, One Dupont Circle. Washington, D.C. 20036, 202/466-5030.

Supporting Research and Technology (SR&T) includes those parts of the NASA budget which directly support the basic research programs in universities and national laboratories. (SR&T is one type of activity in the Research and Analysis lines of the budget.) We recommend a $31M increase in Supporting Research and Technology for Space Science. This will provide the $13M which is needed to reverse this year's further decrease in Planetary SR&T and to provide the modest growth which will bring that program to near the level which this Working Group, the Solar System Exploration Committee, as well as NASA, defined as a minimally viable program effort. The recommendation would also provide a modest $6M increase for SR&T in Physics and Astronomy, $1M in Space Plasma Physics, and the $11M agreed to by the NASA-University Relations Study Group as needed this year for the minimally necessary upgrading of equipment in university research laboratories.

Advanced Technology Development (ATD) encompasses work in advanced instrumentation and spacecraft design that enables the planning and implementation of future space missions. (ATD is also funded out of the Research and Analysis budget line.) This part of the budget supports some activities in universities and national laboratories for advanced instrument technology, and in industry and national laboratories for advanced spacecraft technology. Without adequate support for these activities, the definition of future missions cannot proceed, even when there are scientific investigations which have been selected for study as a result of evaluation of competitive scientific proposals. We recommend a $20M increase to provide a necessary $10M additional for Physics and Astronomy ATD and a necessary $10M for Environmental Observation ATD.

The Space Shuttle and the Spacelab scientific platform promised but has not yet achieved a new era in the conduct of space science experiments. In order to realize this promise of investigations and discovery, the pace of shuttle-borne-earth-orbital experiments will have to be increased beyond its present near-stagnant level. We believe an increase of $25M is the minimally necessary amount to achieve this. It will provide a $12M increase in the amount budgeted for the Solar Optical Telescope, which will permit development of this instrument to go forward. This project has been delayed because of problems in the Space Telescope program but now with those problems finally resolved, there is every reason to proceed. In addition, our recommendation contains a $5M increase for development of low-cost rocket-type payloads to be flown on the Shuttle (such as the Spartan concept), and $8M for development of the Spacelab payloads which have been selected as a result of competitive proposals, but not yet funded for development.

The areas selected for our recommended total augmentation of $76M have been selected from a much larger arena, all of which would be necessary for fully revitalizing the space science effort at universities. To accomplish that would require substantially larger increases in SR&T for universities, a major augmentation in the Explorer budget (comparable to the one passed last year) as well as added funds for physical facilities. These $76M include only high priority items needed to prevent further erosion of space science at universities and to make that very minimal reversal of current trends which we deem to be necessary if we are to attract young scientists into the field.

In the following sections of this report we first describe an issue which has no dollar impact in the FY 1985 budget, that of planetary observers. We then describe in more detail the rationale for the augmentations described above. Finally, we indicate that among these recommendations of very high priority, some are especially critical to the health of space science at universities. In an appendix to this report we summarize our analysis of the President's proposed FY 1985 budget, which was the basis for our recommended augmentations.

PLANETARY OBSERVERS

As part of the core program for planetary exploration through the year 2000, the Solar System Exploration Committee (SSEC) recommended the establishment of the Planetary Observer program which would have a modest but assured level of funding similar to that of the Physics & Astronomy Explorer program. Planetary Observers would consist of inner solar system missions undertaken with modified Earth-orbital spacecraft.

One of the most significant aspects of this proposal for universities is the programmatic stability that it establishes. Program continuity coupled with continuity of support are very important factors in sustaining the vitality of university research groups as has been most recently pointed out in the NASA-University Relations Study Group Report. Although the proposed FY 1985 budget includes finds for the first of the Observers, the Mars Geochemical/Climatological Observer (MGCO), we encourage that the Congress support the recommendations of the SSEC by designating the funds proposed for MGCO as a new start for the Planetary Observer program.

SUPPORTING RESEARCH AND TECHNOLOGY

Supporting Research and Technology (SR&T), includes the development of new instrumentation which will be used in spaceflight, basic research in the space sciences using instruments flown on suborbital vehicles such as high-altitude balloons, and the support of theoretical research. SR&T funds are the cornerstone of NASA support to universities. They are the principal support for graduate student education, for engineering staffs, and for acquisition of general laboratory equipment. They also provide critical support for university research teams analyzing data from past missions. This data analysis provides young investigators with an entrance to space science and provides results essential to effective implementation of future missions which are in various stages of development.

The drastic decline in SR&T funding which occurred in previous years and which imperiled university space science was reversed in FY 1984. Bu the proposed FY 1985 budget includes a reduction in the Planetary Research and Analysis line, which once again threatens a significant cutback in support to university groups. This cut appears to contradict Congressional intent of the last two years to restore funds which the President's proposed budget sought to remove. In other areas of SR&T, the proposed budget is about level with that of this year, which does not provide room to rebuild from the erosion of previous years.

An additional $13M in the Planetary Research and Analysis is essential to develop an effective basic research program. The President's proposed FY 1985 budget for this line is $5M lower than in the FY 1984 budget. With inflation considered, this is an $8M shortfall in FY 1985 from the level of FY 1984. This shortfall once again imperils basic research at many universities, after research groups have already been cut back due to decreases in this budget line two years ago. I addition to an $8M augmentation to return to FY 1984 levels, we recommend another $5M augmentation to begin rebuilding our planetary research program and provide the basis for future lower cost programs of planetary exploration envisioned by the report of NASA's Solar System Exploration Committee.

In the FY 1984 budget, the Congress sought to reverse what had been a trend of declining funding for supporting Research & Technology in Physics and Astronomy. It added $6M to the proposed budget to be used principally for university activities. In fact, NASA needed to use about half of that amount for advanced technology development for future missions including Gravity Probe B (GP-B) and the Advanced X-ray Astronomy Facility (AXAF). Although these are important advanced developments and not improper uses for R&A funds, this meant that only $3M was available for SR&T. And with needs for advanced technology developments in FY 1985, it is not clear that even that $3M will be available for these activities, even though the proposed FY 1985 budget for Physics and Astronomy R&A is essentially level with last year, (or roughly 3% higher in current dollars).

An intellectual and educational base at universities is essential to the effective utilization of new facilities (such as the Space Telescope (ST) and the Gamma Ray Observatory (GRO)), to the analysis of their results and to the development of future missions of comparable significance. The Space Science Working Group (SSWG) has identified the need for a $6M augmentation of the SR&T budget of Physics and Astronomy which will continue the support to universities at the same level as provided for in FY 1984 and will permit the development of a modest new theoretical program in astrophysics. Theoretical studies are essential for understanding the data from ongoing missions, and for delineating the questions that future missions must attempt to answer. We agree with the recent report of the Astronomy Survey Committee that a theoretical program in astrophysics, modeled after the highly successful Solar Terrestrial Theory Program, is badly needed.

The proposed FY 1985 space physics R&A budget in the Environmental Observations program is level with FY 1984. We recommend that $1M be added to this budget. The increase would contribute toward restoring the level of activity which existed prior to the 1981 launch of the Dynamics Explorer spacecraft as well as allow for better utilization of existing data bases and development of new mission ideas.

Continuity of support is essential to university research groups funded by SR&T. A university cannot simply hire and fire research staffs as annual budgets fluctuate. It is thus essential that these SR&T augmentations be treated by both NASA and the Congress as establishing a new base of funding for future years, and not a one-time increase.

In July, 1983, the NASA/University Relations Study Group--chaired by T. Donahue (University of Michigan), and F. McDonald (NASA)--issued a report entitled "The Universities and NASA Space Sciences" in which the unique and vital role which university scientists have played in all phases of the NASA basic space research activities is described.

Two issues which we identify as specially important are firstly, the steady decline of adequate laboratory tools available to the universities to support current activities and to develop experiments for future space missions and secondly, the lack of adequate graduate student support in the space sciences.

The Space Science Working Group concurs with the findings of the NASA/University Relations Study Group. Their report noted that all too often we are training our next generation of scientists and engineers and designing new experiments with equipment from a past generation--instead of equipment that will keep our students and our science up to date and competitive with Western Europe's, Japan's and the Soviet Union's experimental sciences. Also, that report stresses the importance of the training of graduate students for enhancing the technological base of the nation, and finds that the number of graduate students in the area has been inadequate in recent years to maintain that base.

In order to take one small step toward rectifying the problems identified in the report, the Space Science Working Group recommends that $11M be added to the OSSA budget for the acquisition of new equipment (laboratory test equipment, computational equipment and major, shared facilities) in support of space sciences.

Following the findings of the NASA/University Relations Study Group, we recommend that this equipment augmentation be added to the line items for research and analysis in the following areas:

Physics and Astronomy:	$3 Million
Life Sciences:	$1 Million
Planetary Exploration:	$2 Million
Environmental Observations:	$4 Million
Communications:	$1 Million

ADVANCED TECHNOLOGY DEVELOPMENT

The definition studies and development of new technology for future space missions are activities known as Advanced Technology Development (ATD, also funded in the R&A lines). The aims of such studies are to define, prior to initiation of a flight program, the instruments and the spacecraft in the context of specific mission objectives, and to estimate the cost of construction and operation of the space vehicle and the support facilities. These studies are carried out in coordinated efforts by NASA Centers, university research groups, and industrial organizations, They are essential to the future vitality of research and advanced education at the universities where scientists will be the principal users of the new facilities. There is strong support from National Academy of Sciences committees for continued commitment to development of the technology for such missions as Origin of Plasmas in the Earth's Neighborhood (OPEN, since renamed International Solar-Terrestrial Mission, ISTP), the Advanced X-ray Astronomy Facility (AXAF), the Shuttle Infrared Telescope Facility (SIRTF), and Gravity Probe B (GP-B). It is important to the future of university research groups that preparation for such future missions continue, but the proposed budget would not permit this.

Environmental Observations

The OPEN program development, undertaken by NASA at the recommendation of the Academy's Space Science Board report on Solar and Space Physics, has now been reformulated as part of an International Solar Terrestrial Program (ISTP), with participation by the European Space Agency (ESA), and Japan. Preliminary agreements have been reached, and a tentative timetable calls for a new start in FY 1986. The U.S. investigator team has been selected since 1982, instrument definition is in progress and yet ATD funds in the Space Physics R&A line have been decreased from last year's $2.8M to a proposed $1.9M. In fact, about $8M is required to ready these instruments for a new start in FY 1986. Similarly, investigators have just been selected for participation in chemical release investigations on a DOD satellite, the Combined Chemical Radiation and Release Effects Satellite (CRRES), but inadequate funds for definition of these experiments are included in the proposed budget.

Physics and Astronomy and Planetary Exploration

In response to the recommendations of the Report of the Astronomy Survey Committee (the Field Report), NASA has taken significant steps in the development of two major new astronomical missions that will build on the foundations laid down by the highly successful Einstein Observatory (HEAO-2) and the Infrared Astronomy Satellite (IRAS). These new missions, the Advanced X-ray Astrophysics Facility (AXAF) and the Shuttle Infrared Telescope Facility (SIRTF), will provide powerful and unique capabilities for astronomical research that are entirely distinct and complementary to those of the Space Telescope and the Very Long Array (VLA). Both have advanced to the stage of NASA Announcements of Opportunity to propose scientific investigations, and the science investigation teams will soon be selected on the basis of the proposals they have submitted.

Funds for advanced technology are needed to develop systems (Mariner Mark II) that can visit the outer solar system and explore the small bodies (asteroids, comets) of the solar system that provide important clues as to the solar system's origin. Further support is necessary to place low-cost experiments aboard Shuttle and the Long Duration Facility which as yet have not been fully exploited. Additional funding will provide U.S. investigators access to flight opportunities on international missions such as comet Halley flybys. Not only will this yield otherwise unavailable data, but it will show a national willingness to cooperate in international ventures, which will clearly be a theme of future planetary exploration.

University experimenters are waiting to develop their instruments for each of the missions described in the preceding paragraphs, but inadequate funds are available in the FY 1985 proposed budget. This will mean delays in AXAF and SIRTF from the schedules suggested by the Astronomy Survey Committee. For ISTP it appears to mean inability to proceed on the internationally agreed time schedule. For CRRES, it appears to mean inability to have this NASA experiment ready in time for the DOD satellite schedule.

We recommend an augmentation of $20M, $10M in Physics and Astronomy Research and Analysis, and $10M in Environmental Observations Space Physics Research and Analysis for maintaining timely development of these ATD programs. (ATD money for planetary missions such as the Mariner Mark II, is included in the $13M recommended for Planetary R&A in the SR&T discussion above.)

SHUTTLE/SPACELAB PAYLOAD DEVELOPMENT

An essential part of Shuttle's contribution to science was expected to be availability of multiple flight opportunities for both facility-class instruments and relatively inexpensive Principal Investigator-class experiments. Unfortunately, this promise has not been realized because of inadequate funding of both types of science over the past few years. In particular, one element of that program, the facility-class Solar Optical Telescope (SOT), has been delayed. This facility is of crucial importance to the solar and space physics as well as the astrophysics communities. In FY 1984, $12M was removed from this line item to assist the Space Telescope (ST) cost overrun and development problems at Perkin-Elmer. In the proposed FY 1985 budget there is again money for some definition work on SOT, but not enough for full-scale development. Without augmentation of the proposed FY 1985 budget development of SOT will again be delayed, as will be that of many Spacelab experiments which have been selected for flight, such as the OSS-2 set of X-ray astronomy instruments and the Space Plasma Lab (SPL). Furthermore, funding for SPARTAN payloads, which are intended to reduce substantially the cost of flying experiments on Shuttle continues to be inadequate. A total of $25M ($12M for SOT, $8M for Spacelab payloads, and $5M for inexpensive Shuttle payloads such as SPARTAN) are recommended as necessary additions to the proposed FY 1985 budget.

However, the suggested augmentation only partly addresses the basic lack of adequate funding for Shuttle payload development. As we pointed out last year, out of 29 U.S. Principal Investigator-class instruments selected for Shuttle flight in 1978, only three have been funded for development, and thirteen more for definition studies, while thirteen have not been funded at all. With the successful completion of the Shuttle orbital flight program, we urge that the potential vigorous program of P.I.-class experiments. We are pleased that NASA is studying the Spacelab program with the intent to modify the ground rules for experiment implementation so that development of substantially more P.I.-class instruments can be carried out without large increases in the budget. Effective university participation depends on reducing costs and simplifying procedures for P.I. experiments on Spacelab. This is particularly important in view of the proposed use of Space Station for scientific research. Indeed, until the utility of the Shuttle for scientific research can be firmly established the scientific promise of the Space Station must remain in serious doubt.

SUMMARY

By adopting these recommendations, the Congress will take a major step toward rebuilding the strength and vigor of the basic space science research enterprise of the United States. The very high priority items which have been described need budgetary augmentations totalling $76M. They fall into budget line items as follows:

Planetary Exploration Research and Analysis:	+$15M
Physics and Astronomy Research and Analysis:	+$19M
Space Applications Environmental Observations:	+$15M
Life Sciences:	+$ 1M
Communications:	+$ 1M
Physics and Astronomy Shuttle/Spacelab Payload:	+$25M

Among these $76M of very high priority augmentations, we have identified augmentations which are absolutely essential and which amount to $45M, as follows:

+$10M for Planetary Exploration R&A (including the critically needed $8M to return to the FY 1984 level),
+$13M for Physics and Astronomy R&A (including $10M ATD and $3M SR&T),
+$10M for Environmental Observations (for ATD), and
+$12M for Shuttle/Spacelab Payloads (for SOT).

In addition, the $11M recommended to begin to address the need for modern equipment in university laboratories is also of particularly high priority. It is important that a start be made on this and we believe that the NASA/University Relations Study Group makes a strong case for the amount recommended.

The appendix to this statement is a line by line analysis of the Office of Space Science & Applications budget and its effect on university-based space science.

APPENDIX
SPACE SCIENCE AT UNIVERSITIES IN THE PRESIDENT'S PROPOSED FY 1985 NASA BUDGET

INTRODUCTION

This report summarizes the effect on space science of the President's proposed FY 1985 NASA budget. (See the attached budget table). It emphasizes aspects of the budget of the Office of Space Science and Applications (OSSA) which fund research at universities.

The proposed budget includes three valuable new items. In the Planetary Exploration section of the budget is a line item for a new start for Mars Geochemical/Climatology Orbiter (MGCO). In the Environmental Observation section are new starts for the Scatterometer experiment and for the spacecraft of the Upper Atmosphere Research Research Satellite (UARS). These spaceflight programs are of great value to space science, and of special interest to university scientists.

At the same time the FY 1985 budget is deficient in several areas, i.e., Research & Analysis programs which are essential to a productive program of university space science. Indeed it includes a significant cut in the Planetary Research and Analysis line which will severely impact university researchers. In the following sections of this budget analysis we summarize our understanding of the effect of each line of the proposed OSSA budget. Our recommendations for changes in the budget are described in the accompanying statement of the Space Science Working Group.

PHYSICS AND ASTRONOMY

Space Telescope -- The budgeted amount is expected to lead to a 1986 launch of this important new facility. The problems uncovered a year ago which required a significant increase over the earlier planned budget appear to be solved.

Gamma Ray Observatory -- The budgeted amount is as previously planned, leading to a launch in 1988 of this spacecraft which will investigate the highest energy photons from space.

Shuttle/Spacelab Payload Development and Mission Management-- This line includes costs of physics and astronomy payloads and of mission management for all space science and applications missions. The increase from FY 1984 is the result of buildup of management of all missions as well as buildup of the ASTRO-1 payload of ultraviolet telescopes for a 1986 launch and for the OSS-2 x-ray astronomy payload for launch in 1987. The increase also includes a small amount (approx. $3 million) for the SPARTAN program, a new low-cost approach to science on Shuttle which uses the relatively inexpensive techniques of the suborbital rocket program. This line also includes continued definition study of the Solar Optical Telescope (SOT) and the Space Plasma Laboratory, but both of these programs will be delayed from earlier planned launches because of inadequate funds for hardware development. In addition, there is a major backlog of other "selected but not funded" investigations for Spacelab which will remain unfunded in FY 1985.

Explorers -- This line has a 6% increase over FY 1984 permitting continued development of the Cosmic Background Explorer (COBE), the U.S. experiments on the Roentgen satellite (ROSAT), the Extreme Ultraviolet Explorer (EUVE),the Cosmic Ray Isotope Experiment (CRIE), and reflight of the Long Duration Exposure Facility. It also includes funds for definition studies of other Explorer missions. The FY 1984 funding increase for this line made a significant step toward returning the Explorer line to the level of activity that it originally had, about one launch per year. However, another increase (which is not included in the proposed budget), would be required to reach the goal of an annual Explorer launch.

Mission Operations and Data Analysis -- The proposed FY 1985 budget keeps data analysis on the extended missions of the High Energy Astronomy Observatories (HEAO) and the Solar Maximum Mission at the same level as the previous year, without any inflation increase. A substantial increase in data analysis funds for explorer spacecraft, from $13 to $20 million, reflects continued data analysis of the very successful Infrared Astronomy Satellite (IRAS), the forthcoming launch of the Active Magnetospheric Particle Tracer Explorer (AMPTE), and the new activity with the International Sun-Earth Explorer (ISEE-C), which has entered a new phase of mission operations with its redirection past the moon toward a comet encounter.

Research & Analysis -- This line includes Supporting Research and Technology (SR&T) from which the basic grant support for university-based research groups is derived. It also includes Advanced Technology Development (ATD) which is used to fund studies by scientists and by industrial contractors to define proposed new spaceflight missions, bringing these missions to a state where they can be put forward for Congressional approval as new starts. In FY 1984 this line saw a significant increase, due to Congressional action which added $6 million to the proposed budget. Half of these $6 million went toward SR&T and half toward ATD; however, NASA did not treat even the $3M SR&T increase as a new level of funding with which to increase the level of university support, but rather as a one-time increase. In the FY 1985 budget a 3% increase over FY 1984 is proposed, but NASA's plans do not envision any increase over the real level of FY 1983 SR&T funding. The R&A increase over the FY 1983 level will be applied to badly needed ATD efforts. Even so, the proposed budget appears to be inadequate to fund the experimenters and the spacecraft definition for the Advanced X-ray Astronomy Facility (AXAF) or the Shuttle Infrared Telescope Facility (SIRTF). For both of these missions, experimenter proposals have been (or will shortly be) submitted to NASA in response to Announcements of Opportunity.

Suborbital Programs -- This line funds rocket, balloon, and aircraft programs with which many university scientists develop and test new instruments, gather important new data, and train graduate students. It is a vital line to many university investigators. The proposed budget increases each program by 6% (before inflation) over FY 1984, and further increases the aircraft line by $2 million to permit increased infrared observations with which to follow-up discoveries from the IRAS. This very modest augmentation is most welcome.

PLANETARY EXPLORATION

Galileo Development -- The proposed FY 1985 budget includes funding for continuation of the Galileo program, progressing toward a launch in 1986. This program will enhance and extend our knowledge of the outer Solar System through study of Jupiter and its satellite system, and involves numerous university investigations. The program is well past its peak development costs and the proposed budget is $23.4M lower than FY 1984.

Venus Radar Mapper Mission -- This mission was begun in FY 1984 as the first planetary new start since FY 1978. The mission has the endorsement of the Space Science Board and will map the surface of Venus, the most Earth-like, but least known terrestrial planet. The FY 1985 budget shows an increase of $63.5M, consistent with projected development costs. It is significant that this project is continuing its development in line with projected costs. This is an important indication that the recommendations of the Solar System Exploration Committee (SSEC) concerning low-cost planetary missions are realistic and reaching fruition.

International Solar Polar Mission -- This joint NASA-ESA mission to study the interplanetary medium at high ecliptic latitudes receives an increase of $3M from FY 1984. These funds will be used to fit U.S. experiments on the European spacecraft which is scheduled for launch in 1986.

Mars Geoscience/Climatology Orbiter -- is the first of the low-cost, Observer-class missions initiated in response to the coordinated plan recommended by the Solar System Exploration Committee. This exciting mission will pursue the many findings of the Mariner 9 and Viking missions with emphasis on the geological and climatic evaluation of Mars. MGCO is an extremely valuable step in planetary exploration and will involve the active participation of numerous university scientists and afford exciting opportunities for graduate research.

Mission Operations and Data Analysis -- The substantial growth in this line (from $43.4M in FY 1984 to $58.8M in FY 1985) primarily reflects heightened activities associated with the January, 1986 flyby of Uranus by Voyager 2, plus preparations for the Galileo and ISPM programs. The funds allotted appear adequate to keep the active Pioneer and Voyager programs operating effectively.

Research and Analysis -- This line proposes a serious reduction of about 15% (in real terms) in the funding level for the science which should form the backbone of the entire planetary effort. The proposed level is clearly inconsistent with the intent of Congressional actions during the past two years to reverse devastating cuts proposed by the Administration. This planned reduction will forestall a true understanding of the results returned by spacecraft and seems unwise at a time when NASA is planning the series of modest, focussed missions recommended by the Solar System Exploration Committee. Not only will the proposed reductions affect the training of young scientists, they will hamper the advanced mission planning crucial to an intelligent exploration program. Except for limited international commitments to help observe comet Halley, all areas of planetary research and analysis are expected to bear equally the burden of reduced funding.

ENVIRONMENTAL OBSERVATIONS

Upper Atmosphere Research Satellite (UARS) -- The President's budget includes a FY 1985 new start for this mission. This is an important renewal in the environmental observations program which will provide the first global observations of stratospheric and mesospheric ozone, chemical species that affect ozone, energy inputs, temperatures and winds.

Scatterometer -- The proposed budget includes a new start for the Scatterometer project, an oceanographic experiment to determine the winds at the ocean surface through radar scattering measurements of the roughness of the surface.

Research and Analysis -- Environmental Observations includes programs in Upper Atmosphere, Atmospheric dynamics, oceans, and Space Plasma physics. The FY 1985 budget shows modest growth in most of those areas, recognizing the importance of near earth science to the nation. However, the proposed Space Physics R&A budget is level with FY 1984. This is inadequate for the required level of funding for the International Solar Terrestrial Program (ISTP). (This is the so despite the President's concern over the solar-terrestrial environment as expressed in the Williamsburg summit communique.)

The ISTP budget appears to have decreased from the current $2.8M to $1.9M while the required ATD should be at $8.0M a shortfall of $6.1M. This is of particular significance in view of the anticipated 1986 new start for this program. Another area of concern is the shortfall in funding the experiments for the Chemical Release and Radiation Effects Satellite (CRRES), a NASA-funded experiment on a DOD satellite whose development is already underway. The funds included for this development appear to be about $4M short of requirements for timely completion of this instrument.

Interdisciplinary Research & Analysis -- The proposed funding will provide a modest start to integrate the discipline-specific research activities in ocean, atmospheric and land processes to help increase understanding of critical global processes.

APPENDIX

SPACE SCIENCE IN THE FY1985 NASA BUDGET
(in millions of dollars)

	1981	1982	1983 a/	1984	Proposed 1985
Total NASA	5425.6	6020.0	6836.4	7217.5	7491.4
Total Research & Development	4334.3	4772.0	1902.5	2028.5	2400.1
Space Flight, Control and Data Communications			3633.0	3775.3	3600.3
Total Space Science & Applications	873.0	896.2	1034.1	1134.0	1371.5
Total Physics & Astronomy	323.7	322.4	470.3	567.6	677.2
Space Telescope Development	119.3	121.5	182.5	195.6	195.0
Gamma Ray Observatory	8.2	8.0	34.5	86.2	120.2
Shuttle/Spacelab	27.4	47.6	81.0	80.9	105.4
Explorer Development	33.3	33.3	34.3	48.7	51.9
Mission Operations & Data Analysis	38.9	45.3	61.4	68.1	109.1
Research & Analysis	37.7*	22.9	28.5	35.8	36.9
Suborbital	30.9*	43.8	48.1	52.3	58.7
Total Planetary Exploration	175.6	210.0	186.4	217.4	286.9
Galileo	63.1	115.7	91.6	79.5	56.1
Venus Radar Mapper	-	-	-	29.0	92.5
International Solar Polar	28.0**	5.0	6.0	6.0	9.0
Mars Geoscience/ Climatology Orbiter			-	-	16.0
Mission Operations & Data Analysis	61.8	42.6	38.5	43.4	58.8
Research & Analysis	50.7	46.7	50.3	59.5	54.5
Total Life Sciences	42.2	39.5	55.7	58.0	63.3
Flight Experiments	12.7	14.0	24.0	23.0	27.1
Research & Analysis	29.5	25.5	31.7	35.0	36.2
Total Solid Earth Observations	151.4	149.4	128.9	75.4	63.6
Landsat-4	88.5	81.9	58.4	16.8	-
Extended Mission Operations		2.8	1.1	-	-
Shuttle/Spacelab	2.0	12.3	14.5	16.0	18.1
Geodynamics	23.4	22.9	28.1	28.0	29.9
AgRISTARS	21.5	14.0	15.0	-	-
Research & Analysis	16.0	15.5	11.8	14.6	15.6

SPACE SCIENCE IN THE FY1985 NASA BUDGET continued
(in millions of dollars)

	1981	1982	1983	1984	Proposed 1985
Total Environmental Observations	104.1	133.0	156.9	162.0	220.7
Total Research & Analysis	76.8	71.8	86.4	90.9	95.6
Upper Atmosphere		20.5	27.7	28.5	31.0
Atmosphere dynamics and Radiation R&A		22.3	26.5	27.5	28.5
Ocean processes		16.9	17.0	18.2	19.4
Space Physics	***	12.1	15.2	16.7	16.7
Shuttle/Spacelab	1.7	4.1	3.7	7.6	7.8
Operational Sat. Improv.		6.0	6.0	0.6	-
Earth radiation budget	20.3	24.0	24.0	15.5	8.1
Extended mission ops	-	16.1	22.8	27.4	29.5
Interdisciplinary R&A	-	-	-	-	1.0
Tethered Satellite Payloads	-	-	-	-	3.0
Scatterometer	-	-	-	-	15.0
Upper Atmos Research Satel.	-	6.0	14.0	20.0	60.7
Other	5.3	5.0	-	-	-

NOTES

a/ Shown on a comparative basis with the FY1984-85 budget structure.

*These two lines did not include the same items in FY 1981 as in later years and so FY 1981 numbers are not directly comparable. In FY 1981 Physics & Astronomy R&A included Space Physics, which in subsequent years is a separate line in the Environmental Observations section. In FY1981 the Suborbital line did not include Suborbital Airborne Applications of approximately $12 million.

**In FY 1981 ISPM was in the Physics & Astronomy program, and included a US spacecraft (since deleted) in addition to US experiments on a European spacecraft.

***In FY 1981 Environmental R&A did not include Space Physics, which was in Physics & Astronomy R&A.

STATEMENT OF JOHN D. KRAMER, SECRETARY, ILLINOIS DEPARTMENT OF LABOR

Introduction

The Federal Insurance Administration in the Federal Emergency Management Agency (FEMA) is responsible for administering FEMA's floodplain management program. This program is designed to reduce flood damages, thereby alleviating human suffering and economic losses and reducing federal expenditures for National Flood Insurance Program (NFIP) claims and disaster assistance to flood victims.

During the last five years the NFIP has spent an average of $300 million annually for claims and administrative expenses. When insurance premiums are subtracted, the net cost to the federal treasury has averaged $135 million. FEMA disaster assistance payments have averaged $250 million over the last ten years. Since approximately 90% of Federal disaster assistance payments go to flood disasters about $225 million of this has been for floods. These figures do not include the disaster assistance efforts of other federal agencies.

While the annual net FEMA expenditures for post-flood assistance (NFIP and disaster aid) averages $360 million, FEMA has requested an FY 1985 appropriation of only $53 million for floodplain management activities which are intended to reduce flood damages. Two of these activities, the Purchase of Flood Damaged Property Program and the State Assistance Program, are particularly underfunded.

Purchase of Flood Damaged Property Program

Section 1362 of the National Flood Insurance Act of 1968 authorizes FEMA to purchase flood damaged property in order to prevent repeated insurance claims. FEMA began funding this program at a level of $5 million in FY 1980, although it did not at that time have the information necessary to identify with confidence the appropriate funding level.

FEMA has now assessed the appropriate funding level for the program and issued a report entitled, "Assessment of Annual Funding Need for Purchase of Flood Damaged Property Under Section 1362." While this report was not intended as a basis for its appropriation requests, FEMA concluded that $15 million would be a more useful funding level and that this figure "is probably on the conservative side." The report also lists several examples where FEMA has already saved more than it spent because purchased properties have been flooded since the buildings were purchased.

It is now becoming clear that this program is underfunded. As noted in its report, FEMA currently has nearly $15 million in eligible applications. Eligible applications from Illinois exceed 25 percent of the proposed national appropriation, and Missouri needs more than the amount available in a single year for the entire nation. We therefore recommend that the appropriation for FY 1985 be increased to $15 million.

State Assistance Program

The State Assistance Program (SAP) grants funds to the states to provide technical assistance on floodplain management to local governments. This assistance has greatly improved local and state floodplain management programs, thereby preventing improper floodplain development and contributing to reduced disaster relief expenditures and flood insurance claims.

One of the SAP activities in Illinois was the performance of Community Assistance and Program Evaluations for 60 cities and counties. These evaluations were performed at less than 25 percent of the cost had FEMA performed the evaluations. FEMA called the quality of our work "fully commendable." The savings resulted from our proximity to the communities and efficiencies in arranging travel. Through our efforts, 228 communities were also able to qualify for participation in the NFIP without performing a full flood insurance study. In addition to providing protection to these communities more quickly, this effort saved FEMA more than $6 million which it would have needed to perform the studies.

These cost savings would not have been possible had the State Assistance Program not permitted us to direct our staff and time to the needs of the National Flood Insurance Program. In spite of the accomplishments to date, much still needs to be done. Monitoring and assisting community programs is a continuous job. Local officials change office and development pressures arise in new and unexpected places. As communities gain more experience in the National Flood Insurance Program, they ask for assistance in new endeavors such as floodproofing and hazard mitigation.

The funding level for the State Assistance Program in Fiscal Years 1980 and 1981 was $4,600,000. FEMA reduced this level to $3.0 million in FY 1982. In FYs 1983 and 1984, the level was $3.24 million and FEMA required a 25 percent state match. In Illinois, as in most other states, the match was an in-kind credit of existing activities. Therefore, the total State Assistance Program effort was actually reduced from FY 1981 levels.

The FY 1985 proposed budget will provide only $3.24 million for the SAP. In addition, the Administration is proposing to terminate the program at the end of FY 1985. The Illinois Department of Transportation believes that the SAP is far too valuable to be discontinued. We urge Congress to provide sufficient funds to restore program levels to those of FYs 1980 and 1981 and to retain the program beyond FY 1985. We endorse the recommendation of the Association of State Floodplain Managers that the level of federal funding for the SAP in FY 1985 be set at $6 million.

Related NFIP Issues

The Federal Insurance Administration (FIA) has set an objective of self-sufficiency for the NFIP by 1988. When the NFIP was created in 1968, Congress intended to provide a federal subsidy for existing properties built in flood hazard areas. As existing properties were destroyed or otherwise replaced by flood protected properties over the years, the federal subsidy would gradually decrease. Although Congress did not establish a target date for the elimination of subsidy, the discussion at the time indicated that some level of subsidy would be needed for 50 to 100 years.

The Administration has decided that the federal subsidy should end by 1988. It is using three techniques to reach that goal: create a broader policy base to absorb the losses from severe local floods, increase rates, and reduce the coverage of NFIP policies. We heartily support the first of these three techniques. As a result of Congressional concern about the second, the Federal Insurance Administrator agreed to delay further rate increases for two years.

The third technique to reduce the federal subsidy has been to reduce the coverage of flood insurance policies. We are extremely concerned about recent reductions in coverage which affect a large number of Illinois policy holders.

In June 1982, FIA terminated coverage for those damages to buildings which were not directly caused by surface waters. This action affected two types of flood damage which had previously been covered: sewer backup and seepage or subsurface flows.

Sewer backup is a major problem in metropolitan areas where storm sewers cannot handle heavy local rains. The best example of this problem in Illinois is the Village of Skokie which has a combined sewer system draining into the North Shore Channel. After a heavy rain the channel rises, blocking the sewer system's outflow. The resulting sewer backup floods many homes and basements in Skokie. Even though Skokie has no overbank floodplain, between 1979 and 1982 FEMA paid 165 claims in the Village. The recent change in NFIP coverage will leave this area without adequate insurance protection.

The second group of people affected by this rule are those who live in areas protected by levees. When a river exceeds flood stage, the levees will keep overbank waters from damaging properties. However, when the water is up for long periods of time, as often happens on the Mississippi and Illinois Rivers, water seeps under the levees and raises the water table. One area affected by this problem is the American Bottoms around East St. Louis. In this area thousands of homes are subject to flooding from rising groundwater on a frequently recurring basis.

On October 1, 1983, FEMA discontinued coverage for the finished parts of basements such as paneling and furniture. Since a basement is defined as a floor that is sub-grade on all sides, the term includes split levels, bi-levels, and garden apartments. This termination of coverage came despite NFIP construction regulations which permit properly built basements in non-residential buildings and in residential buildings in communities granted a special exception.

Now that property in a basement is not covered by the NFIP, a large number of flood insurance policy holders in Illinois are no longer protected from the type of flooding which they experience. While we support FEMA's efforts to terminate coverage for damages that are not actually caused by flooding, the elimination of basement coverage reduces the protection provided by the NFIP to the majority of buildings participating in the program. This change is particularly damaging to those living in garden apartments who do not have the option of leaving their basements unfurnished and living on higher floors.

We recommend that property owners be given the opportunity to purchase additional protection in case of rising ground water, sewer backup or surface flows that flow into basements. FEMA should do this with a finished basement rider to its Standard Flood Insurance Policy. This rider would provide coverage to the below grade properties for damages caused by flooding; regardless of whether the water entered the building above or below the surface of the ground. The rider's rates can be actuarial or subsidized to the same degree as the other flood insurance rates.

We recommend that Congress examine FIA's objective to make the NFIP self-sufficient by 1988. We hold that the increases in rates and the reductions in coverage on existing properties are steps that are contrary to the original intent of the National Flood Insurance Act of 1968.

Conclusion

The Illinois Department of Transportation supports increased funding for the Section 1362 damaged property acquisition program and the State Assistance Program. Relatively modest levels of funding for these programs will have a substantial long range return by reducing flood damages. In addition, Illinois is very concerned by the actions taken by FEMA in its attempt to make the NFIP self-sufficient. Congress should carefully examine both this objective and the impact of the specific actions in order to preserve the goals of the National Flood Insurance Program.

STATEMENT OF ANTONINE LAFATA SOTTILE, PH.D. OF ENGINEERING, WASHINGTON, DC

Honorable Congress of The U.S.A.
SENATE Appropriations Committee
Energy and Water Development
SubCommittee.Washington DC.20510

Ref: ************************************
SENATE Record Part 3. Fiscal Year 1984
My Statement pages 1643 to 1653
with my Petition to Appropriate my Projects
by $. 25. Millions, in order to assure
to our NATION enormous benefits and Leadership
next years, next Century.
Introduction again of the above TABLED
PETITION for consideration in F.Y. 1985.

Honorable Chairman and Members
of the Committee
****

By introducing again my Petition to Appropriate $. 25. Millions to my Projects, in order to START 2. Initiatives of emergency importance, I pray you to allow me to testify on the issues during current Hearings.

First Initiative: To build a WAGON EUREKA, electric Vehicle, prototype, my INVENTION, with its body at permanent levelness, and underframe engaged in successive downgrades and upgrades, assuring 4/5 of energy savings in Transportation by exploiting Gravity.
To take also into consideration my ATLAS interchange, replacing the obsolescent, current clover-leaf interchange in highways.

Second Initiative: To shuttle a SOLAR MIRROR Concentrator in Earth's Synchronous ORBIT, and try to reach at ground level efficiencies of 20. KWH./m^2 x day in Photovoltaic and Thermal Panels.

A lapse of 5. years would occur to perform this experiment through only one Solar Mirror
A lapse of 50. years would occur to settle 120. Solar Mirrors Concentrators in Earth's Synchronous Orbit and the required Solar Panels at ground level, according to my outline.

This outline would provide 8.76 T. KWH./year (T.=Tera =Trillion) = 87.6 Quads in obsolete Units. This amount would result above the total energy of every kind, used in one year, in recent years in the U.S.A.

During my past STATEMENTS, I STRESSED :
1) The TECHNOLOGICAL Impact of my Projects: based on the 7. Immortal Principles to solve forever problems of Economy and Energy, their Importance increases by passing of time.
For comparison, the current epoch of Computers based on VLSI. = Very Large-Scale Integration, with Silicon Chips, 6. Millimeters on a side, compacting inside 600,000. Transistors, will be replaced by a future epoch of Computers based on ULSI. = Ultra Large-Scale Integration with Silicon Chips compacting inside 1.Billion Transistors.

2) The ENVIRONMENTAL Impact of my Projects: by curbing current extermination of FOSSIL FUELS they contribute to save the habitability of our Planet.
Also these Fossil Fuels, saved from destruction, together with other Natural Resources, would be available in the future, as MONETARY Guaranty of the Dollar: Natural Resources STANDARD, displacing the current, obsolescent Guaranty of the Gold Standard . Present ALCHEMISTS may "CHANGE" ordinary Elements into GOLD by Fission, Fusion, or Impact in Heavy-ION Accelerators.

3) The ECONOMICAL Impact of my Projects: They generate WORKS' Opportunities and provide effective means to curb crises deriving from unemployment, inflation, recession, while otiose, ordinary financial Palliatives turn out counterproductive.
It is necessary to stress that the so-called PORK-BARREL Public Works are frequently BLAMED to be unproductive and provoking deficits and bankrupcies,
Unlimited Opportunities of Works, and PROFITS for thousand years, will be assured by my Projects and my Inventions.

THANK YOU
****

Committees on APPROPRIATIONS - Energy and Water Development Sub-Committees Hearings -
12) Fiscal Year 1984. RECORD : SENATE Part 3. pp. 1643-1653 - March 24. 1983.
11) " " " " HOUSE " 7. " 874 -884 " " "

TECHNOLOGICAL IMPACT of my Projects : based on the 7. Immortal Principles to solve forever Problems of Economy and Energy, their importance increases by passing of Time.
ENVIRONMENTAL IMPACT : by curbing current extermination of Fossil Fuels they will contribute to safeguard the habitability of our Planet. The saved Fuels in the Future would be available to the Natural Resources STANDARD, as MONETARY Guaranty of Dollars.
ECONOMICAL IMPACT : Providing unlimited Opportunities of WORKS and PROFITS they would be appropriate to solve Economical Crises, while otiose Financial PALLIATIVES and so-called PORK-BARREL Public Works are blamed to be provoking deficits and bankrupcies

10) Fiscal Year 1983. RECORD : SENATE Part 4. pp. 2711-2717 - April 24. 1982
9) " " " " : HOUSE " 8. " 2586-2593 - " 1. "

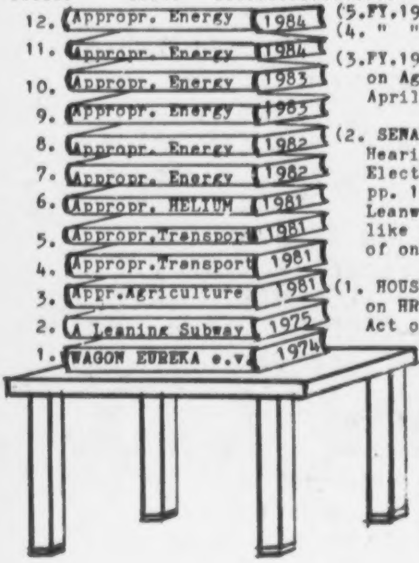
Five PATENTABLE Concepts stressed in my Projects - Solar MIRRORS Concentrators settled in Earth's SYNCHRONOUS Orbit to provide unlimited, clean, almost FREE Electric Energy- The intervention of Army Corps of Engineers, Five Power Administrations, Tennessee Valley Authority, etc., would save time, waiting for private initiatives only -
- Petition to avoid the dismantling of the Department of Energy.

8) Fiscal Year 1982. RECORD : SENATE Part 3. pp. 1932-1943 - March 24. 1981.
7) " " " " : HOUSE " 10. " 2402-2411 - " " "

Seven Immortal Principles : Solar Energy ; Electrification ; Electro-magnetic suspension-propulsion ; Savings of energy ; Tunneling generalization ; Gradients' utilization ; 7) Wagon EUREKA, electric vehicle, expansion -
- A.L.S. = Air, Land, Sea, Zero-fuel, transportation Immortal Plan -Twin Dirigibles = = LTA.: Lighter Than Air Craft - Plan 3-phase of Transports' electrification -
- Planets VENUS and MARS conditioned in a 50-year lapse - ATLAS Interchange replacing the Clover-leaf one, and assuring uninterrupted Urban and Highways TRAFFIC - RESUME'-

6) SENATE Committee on APPROPRIATIONS F.Y. 1981.-Hearings on Department of INTERIOR : RECORD Part 3. pp. 953 to 957 - May 16. 1980. Statement on HELIUM uses and storage. Next Century Helium STANDARD could replace Gold Standard as MONETARY GUARANTY of DOLLA

SENATE and HOUSE : TABLED STATEMENTS



Committees on Appropriations for Transportation:
(5.FY.1981.SENATE RECORD Part 2. pp. 144-150 Apr17.1980.
(4. " " HOUSE " " 7. " 615-619 " 16. "

(3.FY.1981 SENATE Committee on Appropriations:Hearings on Agriculture - RECORD Part 3.-513 514 515 pp. April 2. 1980. Statement on Useful Industrial Products by HARVESTED Plants.

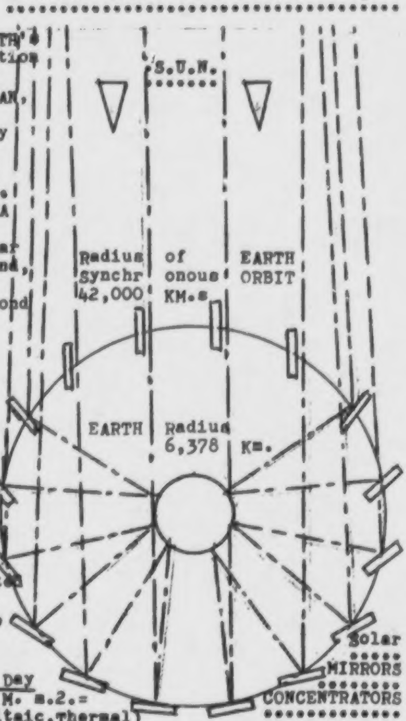
(2. SENATE Committee on Commerce, Science & Transport. Hearings on S.1632 & HR.8800 - Oct. 7-10 1975. Electric Vehicle R.D.& D. Act of 1975. RECORD 94-96 - pp. 161-164 :My Project "LEANWAY=A Leaning Subway Leanway's MOTTO:"To build and to operate 2. Subways, like the Washington Area Metro-Rail, by the BUDGET of only one." "To move 5. alike Subways by the ENERGY of ONLY ONE"

(1. HOUSE Committee on Science & Technology: Hearings on HR. 5470. June 3-6 1975. Electric Vehicle R.D.& D. Act of 1975. RECORD 27. pp. 728-740 -
My INVENTION: WAGON EUREKA, Electric Vehicle, assures Savings of Energy in the range of 4/5 in Transportation.
Wagon EUREKA keeps its body at permanent levelness (exploiting: Gyroscopic effect of Flywheels; LASER Beam Gyroscope; Resistance of Air at higher and highest Speeds, etc.)
while its UNDERFRAME, engaged in successive downgrades and upgrades, provides FREE ACCELERATIONS.

Mr. Antonine Lafata Sottile
Ph. Doctor of Engineering

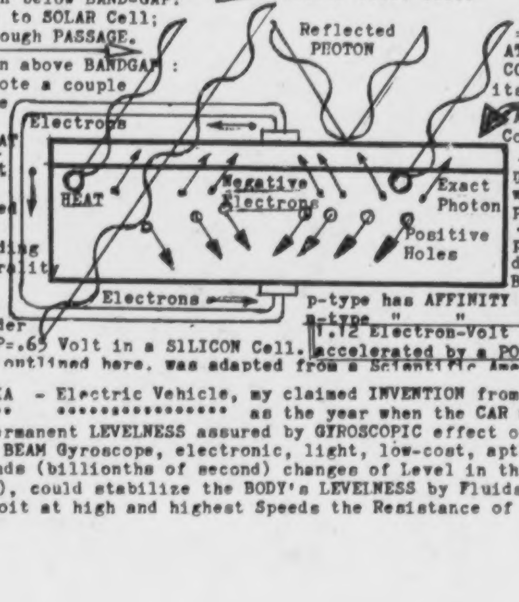
NATIONAL ENERGY INDEPENDENCE Project

SOLAR MIRRORS CONCENTRATORS settled in EARTH's SYNCHRONOUS Orbit would assure SUN's radiation almost night-and-day on selected AREAS of EARTH surface, and provide UNLIMITED, CLEAN, near FREE Electric Energy.
PHOTOVOLTAICS' Efficiency = 5.KWh./m.^{2} x Day would result multiplied to 20. " ./". x "
assuming explcitation of COGENERATED HEAT.
120. Solar Mirrors Concentrators in Synchr. Orbit, each one illuminating a 10. Km.^{2} AREA of Ground surface, at 20.KWh./m.^{2} x Day efficiency, would generate 8.76 T. KWh./Year that is above the total Energy of every kind, used last Year in the U.S.A. -
8.76 Tera KWh. (T.= Tera =Trillion)correspond in Obsolete Terms to 87.6 QUADS -
140. Solar Mirrors in identical assumed settlement would generate 10.T.KWh./Year and Up, that is about the total Energy of every kind supposed to be used around Year 2000. in the U.S.A.


S.U.N.
Radius of Synchronous EARTH ORBIT 42,000 KM.s
EARTH Radius 6,378 Km.
Solar MIRRORS CONCENTRATORS

One Million K.watt Solar Plant (1.M.KW.) by average INSOLATION =1.KW./sq.meter (1.KW./m.2.= below average Insolation in the U.S.A.), could require 1.Million m.2.= = 1.Km.square of photovoltaics to generate 5.M. KWh./Day, complying with Department of Energy's GOALS of 5.KWh./m.2. x Day, accounting with: exploitation of cogenerated Heat - Solar panels pointed to South, and inclined by an angle equal to the Latitude of the site - eventual concentrators, mechanisms to track the SUN, etc. -
The multiplied efficiency = 20.KWh./m.2.x Day assumed in my PROJECTS would require 1./4 M. m.2.= =1./4 Km. square of Solar panels (photovoltaic,Thermal) to generate 5. M. KWh./Day, as above, through a lower PEAK Power capacity Solar plant = 1./4 Million K.watt, accounting with:
Exploitation of cogeneration - permanent insolation during almost 24.Hour./Day - - Stronger insolation than average at ground level, (by example: in the range of Equatorial insolation) provided by MIRRORS CONCENTRATORS in SYNCHRONOUS ORBIT.

SILICON SOLAR WAFER



Energy of Photon below BAND-GAP: no energy given to SOLAR Cell; ineffectual through PASSAGE.

Energy of Photon above BANDGAP: 1.12 EV.to promote a couple of Electron-Hole Energy excess converted to HEAT

External Circuit through which, ELECTRONS trapped in the n-type Layer and exceeding electrical neutrality recombine with HOLES in the p- -type Layer, under VOLTAGE BUILD-UP=.65 Volt in a SILICON Cell.

Energy of PHOTON= =BAND-GAP =1.12 EV.= =Energy needed in a Si. ATOM to promote into the CONDUCTION BAND, one of its 4. VALENCE Electrons.

Antireflecting Coating

n-type SILICON doped with PHOSPHORUS traces P.=5.Valence Electrons

p-type SILICON layer doped with BORON traces B.=3.Valence Electrons

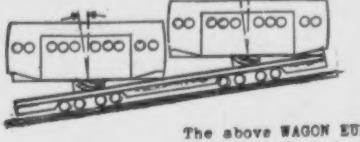
p-type has AFFINITY for Positive HOLES
n-type " " " Negative Electrons

1.12 Electron-Volt =Energy of an Electron accelerated by a POTENTIAL of 1.12 VOLT

The SOLAR WAFER outlined here, was adapted from a Scientific American Oct. 1976 Issue

- **WAGON EUREKA** - Electric Vehicle, my claimed INVENTION from year 1974, claimed as the year when the CAR was REINVENTED.
- Its BODY's Permanent LEVELNESS assured by GYROSCOPIC effect of FLYWHEELS.
- Also a LASER BEAM Gyroscope, electronic, light, low-cost, apt to DETECT in Nano-Seconds (billionths of second) changes of Level in the order of n.m. (nano-meters), could stabilize the BODY's LEVELNESS by Fluids and Servomechanisms. Also to exploit at high and highest Speeds the Resistance of Air, alike flying Aircraft.

WAGON EUREKA - ELECTRIC VEHICLE -

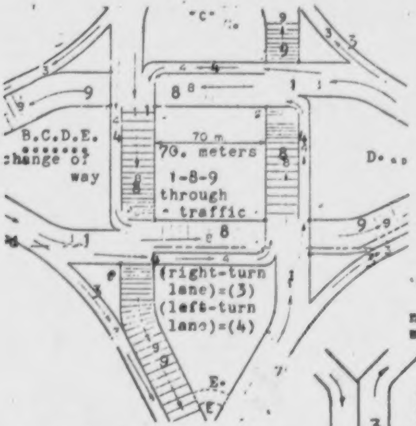


The FLYWHEELS utilized as well as accumulators and recuperators of Brakes' Energy, with the UNDERFRAME, engaged in successive downgrades and upgrades, to provide FREE positive and negative Accelerations, exploiting GRAVITY.

SAVINGS of ENERGY in the range of 4/5 assured in Transportation for thousand years

The above WAGON EUREKA's outlined Prototype, valid for Railroads, would be adapted, through varying SIZES, to Roads and to Travel at highest Speeds on the Electro-Magnetic field.

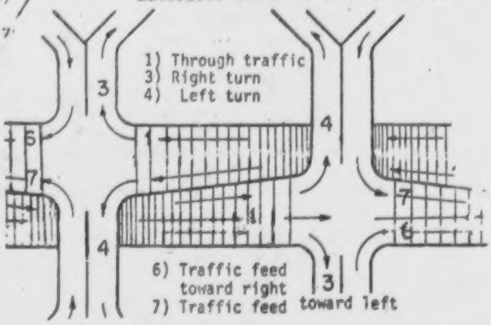
ATLAS INTERCHANGE : compact, with at-level, short right-turn and left-turn LANES. To replace at crossing of HIGHWAYS, ordinary, extended, costly, landscape obstructing Clover-Leaf Interchange, and to assure Highways, and Urban UNINTERRUPTED TRAFFIC.



At.La.S. Interchange : (Alternance Lanes System) in URBAN TRAFFIC could avoid the operation of 4. Semaphores at the intersection of 2. couples of uni-directional contrary-way streets.

Through Wagon Eureka's permanent Levelness, Passenger will appreciate alike feelings as in ordinary Elevators, nor CARGOES will receive damage.

By eliminating Signal-Controls the Traffic capacity of a Road at least will be doubled; buying and maintaining complicated Signal installations no more necessary; enormous amount of time, materials and fuel will be economized



HIGHWAYS' TRAFFIC FEEDER
(Junction)

(10) SENATE Committee on APPROPRIATIONS Fiscal Year 1983 - Hearings on Energy and Water Development - Record part 4. pp. 2711 to 2717 - April 24. 1982 statement on :
- Five patentable concepts stressed in my projects - 120 Solar MIRRORS Concentrators settled in Earth's synchronous Orbit, to generate at ground level 8.76 T.KWh./year (T.=Tera =Trillion), corresponding to 87.6 Quads ; amount above the total Energy of every kind used yearly by The U.S.A., in recent years. The intervention of Army Corps of ENGINEERS, five POWER Administrations, Tennessee Valley Authority, etc. would save a decade of lost time, waiting for private initiatives only--
- petition to change the Department of Energy into Department of SOLAR ENERGY, in order to avoid its dismantling -

(9) HOUSE Committee on APPROPRIATIONS F.Y. 1983 - Hearings on Energy & Water Development Record part 8. pp. 2586 to 2593 - April 1. 1982 statement as the above one to SENATE.

(8) SENATE Committee on APPROPRIATIONS F.Y. 1982 - Hearings on Energy & Water Development
NATIONAL ENERGY INDEPENDENCE
Record part 3. pp. 1932 to 1943 - March 24.1981 Statement on :- Seven Immortal principles to solve forever problems of Energy and Economy ! 1) Solar energy ; 2) Electrification ; 3) Electro-magnetic suspension-propulsion ; 4) Savings of energy ; 5) Tunneling generalization ; 6) Gradients' utilization ; 7) Wagon EUREKA, electric vehicle, expansion - Solar Mirrors in synchronous Orbit -
- A.L.S. =Air, Land, Sea, Zero=fuel Transportation Immortal plan -
- Twin Dirigibles = LTA. (Lighter Than Air craft) - plan 3-phase of Transports' electrification - planets VENUS and MARS conditioned in a 50-year lapse -
- ATLAS Interchange replacing ordinary clover-leaf Interchange and assuring Urban and Highways uninterrupted Traffic - Resumè, Inventions, publications, booklets, etc.

(7) HOUSE Committee on APPROPRIATIONS F.Y. 1982 - Hearings on Energy & Water Development Record part 10.pp. 2402 to 2411 March 1981 statement as the above one to SENATE -

(6) SENATE Committee on APPROPRIATIONS F.Y. 1981- Hearings on Department of Interior - Record part 3. pp. 953 to 957 - May 16. 1980. Statement on HELIUM uses and storage : Helium=gas' and Sun=Helios' Civilization beginning next century with Helium-STANDARD to be appreciated in a Higher degree than GOLD-STANDARD -

(5) SENATE Committee on APPROPRIATIONS F.Y.1981. Hearings on Transportation - Record part 2. pp. 144 to 150 April 17.1980 see above # 8.

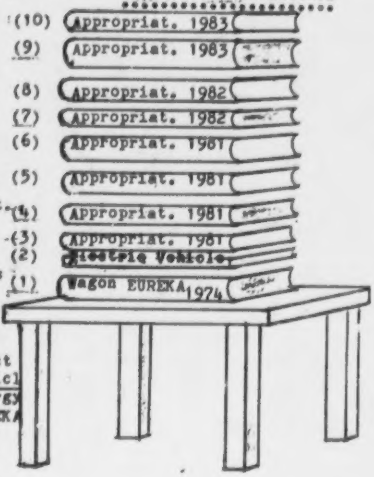
(4) HOUSE Committee on APPROPRIATIONS F.Y.1981. Hearings on Transportation - Record part 7. pp. 615 to 619 April 16.1980 see above # 8.

(3) SENATE Committee on APPROPRIATIONS F.Y.1981 Hearings on Agriculture - Record part 3. pp. 513 514 515 - April 2.1980 statement on: Useful industrial products by harvested plants

2) SENATE Committee on Commerce, Science & Transport. Oct. 7 & 10 1975. Hrgs. on S. 1632 & H.R. 8800 Electric Vehicle R.D.&.D. Act of 1975 pp. 161 to pp. 164 Record 94-96- LEANWAY = A Leaning Subway Leanway's MOTTO:"To build & to operate 2. Subways like the Washington Metro-rail, by the BUDGET of only one -To move 5. Subways by the ENERGY of only one"-

1) HOUSE Committee on Science & Technology -June 3. to 6. 1975 Hrgs. on H.R. 5470 El. Veh. R.D.&D. Act of 1975 pp. 728 to 740 Wagon EUREKA electric Vehicl Record 27.- MY INVENTION assuring savings of Energy in Transportation in the range of 4/5. Wagon EUREKA keeps its body at permanent levelness, while its underframe, engaged in successive downgrades and upgrades, provides FREE ACCELERATIONS.

SENATE & HOUSE RECORDS


(10) Appropriat. 1983
(9) Appropriat. 1983
(8) Appropriat. 1982
(7) Appropriat. 1982
(6) Appropriat. 1981
(5) Appropriat. 1981
(4) Appropriat. 1981
(3) Appropriat. 1981
(2) Electric Vehicle
(1) Wagon EUREKA 1974

STATEMENT OF THE NATIONAL EMERGENCY MANAGEMENT ASSOCIATION

The National Emergency Management Association wishes to express support for the appropriations request of the Federal Emergency Management Agency for fiscal year 1985.

NEMA includes among its membership the Director of disaster emergency services of each of the 50 states. We are each responsible in our individual state for the development and maintenance of a comprehensive emergency management capability to reduce the impacts of disasters which inevitably occur and to speed recovery of disaster victims and restoration of public services. The technical and financial assistance provided by the Federal government is critical to the maintenance and improvement of that capability.

We support the Integrated Emergency Management System initiative by which FEMA seeks to focus programs on the common capabilities required to cope with all the hazards identified by a jurisdiction. The warning devices, communications systems, emergency operations centers, training and exercise experience acquired with FEMA aid have demonstrated repeatedly their value in a variety of natural and technological disaster emergencies. FEMA provides the motivation and growing momentum towards the mitigation of disasters; that is the pre and post disaster mitigation planning that is the strongest hope for eventual reduction of the need for expensive response and recovery systems. Professional emergency management organizations of state and local governments integrate these capabilities with other resources of their governments in effective preparedness plans and efficient emergency operations.

The enormous cost of disaster relief and recovery programs must be reduced. We believe that adequately supported emergency management programs make a cost-effective contribution to that end. We recommend favorable consideration of the FEMA appropriation request and would be happy to provide additional information and testimony at the Subcommittee's request.

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT-INDEPENDENT AGENCIES APPROPRIATIONS FOR FISCAL YEAR 1985

TUESDAY, MAY 8, 1984

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, DC.

The subcommittee met at 10 a.m. in room SD–124, Dirksen Senate Office Building, Hon. James Abdnor presiding.

Present: Senators Garn, Abdnor, and Leahy.

NONDEPARTMENTAL WITNESSES

NATIONAL SCIENCE FOUNDATION

STATEMENT OF DR. IZAAK WIRSZUP, PROFESSOR OF MATHEMATICS, UNIVERSITY OF CHICAGO

HEARING PROCEDURE

Senator ABDNOR. The subcommittee will come to order.

Yesterday, we heard from 37 witnesses concerning the programs funded through the 18 agencies under this subcommittee's jurisdiction. Today, we will continue this part of our hearing by taking testimony from an additional 26 nondepartmental witnesses.

Because of the number of witnesses wishing to testify and in order to allow time for questions, I am going to have to ask the witnesses to limit their statements to 5 minutes. We will, of course, place your entire statement in the record.

Our first witness today is Dr. Izaak Wirszup, who is professor of mathematics at the University of Chicago.

Senator ABDNOR. Dr. Wirszup, we welcome you to the committee. As I say, I'm sure you must have a much longer statement than the 5-minute summary we are talking about. I assure you it will all be made a part of the record.

Mr. WIRSZUP. Thank you very much, Honorable Senator Abdnor. I am most grateful for your invitation to testify once again before this distinguished committee on the National Science Foundation.

The committee has shown exceptional understanding and foresight concerning these issues and their effect on the American economy and national security. Last year, you were instrumental in the Senate's $75 million appropriation to help the Director increase the scope and effectiveness of its programs aimed at resolving our education crisis. For this, the U.S. scientific and educational communities are indebted to the committee.

The United States is now facing one of the sternest challenges in its history. On the one hand, the United States is still acknowledged as the world leader in science and technology. We are a nation whose scientific elite has, for the past 50 years, been in the forefront of research and discovery, whose major universities and training programs are a magnet for students, scholars, and scientists from other countries.

The United States has also developed a system of civic education that is among the very finest anywhere. Nevertheless, American elementary and secondary education, especially in the areas of science and mathematics, is in dangerous condition.

Fortunately, awareness of our educational crisis has already inspired a number of grass roots movements involving parents, teachers, and leaders of industry and government. We are now witnessing a period of increased hope and expectations on the part of the American public. One could cite many examples of constructive educational improvement now being implemented in schools throughout the country.

While these positive developments should be encouraged and expanded, we must not lose sight of the global picture. To believe that we are taking adequate measures to resolve our national educational crisis would be a dangerous complacency, an illusion. It is on a worldwide scale that we must measure the state of U.S. education vis-a-vis that of other nations, in particular, our economic competitors and military adversaries. The fact is that every Soviet soldier completes one of three versions of their compulsory secondary schooling and has at least 3 to 4 years more study in mathematics, physics, chemistry, technology, geography, and a foreign language than an average American recruit.

Our continuing educational crisis represents a challenge much more dangerous and far more difficult to overcome than the quantity and quality of the technical weaponry at the disposal of the awesome Soviet military machine.

The comparative studies and other corroborated evidence clearly shows that there is a formidable challenge to America's present position and future as a nation. In order to reestablish our country's scientific and technological superiority and industrial and economic vitality and to develop a strong national defense, we must raise the Nation's general level of educational achievement by 3 to 4 years, equivalent to the level already achieved by secondary school graduates in Japan, the Soviet Union, Eastern Europe, and even South Korea and Taiwan.

Resolving our educational crisis will be thus an undertaking of unprecedented magnitude. It is evidence that the policies and measures instituted to date do not begin to approach the changes needed. The only answer is a Federal-sponsored national mobilization for education and a coordinated mobilization in each of the States. I'm not saying a federally supported national mobilization for education; I speak about a federally sponsored.

In spite of the U.S.S.R.'s tremendous achievements, I do not recommend that we adopt the educational goals or practices of the Soviet's dictatorial regime. Nor should we attempt to imitate the highly successful centralized system used in Japan. We have a decentralized system that is in many ways the highest expression of freedom and democracy. We must preserve that system and make it more efficient.

Thanks to this committee's generous budgeting for fiscal year 1984, the NSF Directorate for Science and Engineering Education has been able to rebuild its staff and organization activities along the guidelines stated in the committee's appropriations bill of June 1984.

Utilizing the Foundation's and its own special strength of close working relationships with academic institutions and the scientific communities, the Directorate has been able to support creative ideas from around the country and to award funding on the basis of quality and merit.

The Directorate has taken a very responsible approach to program development, striving for maximum benefits and accountability from the projects it supports. In summary, it has been doing its utmost under the circumstances in this year of renewed and expanded activities. In my judgment, the Directorate has amply fulfilled its promise and fully deserves the support it has requested for fiscal year 1985.

I am making another appeal, Senator Abdnor, that you and Senator Garn, the chairman of your committee, and the distinguished committee, led by a bipartisan effort to launch a national mobilization for education.

Given the present budget deficits and the need to prepare the Congress, the executive, and the Nation for this enormous undertaking, I appeal to you not only to support the Directorate's proposed activities for fiscal year 1985, but also to request that the Directorate develop a 1986 agenda that includes both long-range goals and specific and immediate steps to offer our youth the best education in the world and meet our country's greatest challenge.

In view of the absence of detailed national guidelines for precollege mathematics achievement and the paucity of curriculum improvement and teacher training programs, I am particularly pleased to report here today on an exciting and significant development; namely, a partnership between a major American industrial corporation and a major university to undertake a highly innovative mathematics pilot program for Chicago area schools.

In opening your hearings of your distinguished committee last year, Senator Garn expressed a number of ideas concerning ways in which the private sector can and should help to resolve our educational crisis. It is especially appropriate to raise this matter at today's hearings on the National Science Foundation, for it was work done under the auspices of the NSF Directorate for Science and Engineering Education which served as the catalyst for this unique project.

What we are attempting to do at the University of Chicago is respond to crucial problems in school mathematics education with a wide-ranging 6-year project. The effort is being generously supported by the Amoco Foundation, Standard Oil of Indiana. Executive and scientists at Amoco familiar with the 1979 studies in international mathematics education produced by the university's NSF survey of recent East European mathematical literature had discussed the development of a pilot program that could implement some of my recommendations for new curriculum design, instructional strategies, and teacher training. A University of Chicago faculty committee spent a year designing such a program to be conducted jointly by the university's department of mathematics and education.

In September 1983, Amoco awarded the University a grant for the first year of what we plan as a 6-year program.

The program has assembled a rare combination of talent and resources from the University of Chicago, other universities, local school systems, and industry. The principal goal is to design and implement a far-reaching, applications-oriented mathematics program for all students.

The University of Chicago administration has affirmed its responsibility to elementary and secondary education and its commitment to this project. We hope that this partnership between the University of Chicago, Amoco, and Chicago area schools will provide a model for the State of Illinois and the Nation.

PREPARED STATEMENT

I submit herewith for the hearing record a statement of May 8, 1984, addressed to you, Senator Abdnor. I am most grateful for your providing this opportunity. Pardon me for the few extra minutes.

Thank you, sir.

Senator ABDNOR. Thank you, Doctor. I know it is expecting an awful lot to get a statement made like that in 5 minutes. I appreciate your wisdom and knowledge.

I want to compliment you and the University of Chicago and the Amoco Foundation on the foresight you have shown in establishing the mathematical pilot program for the Chicago area schools. We are looking forward to the results of that program.

I would also just like to say that we appreciate your suggestion that we insist that the NSF develop a long- and a short-term agenda for 1986, including specific goals. Senator Garn is going to insist on this kind of planning. In fact, this year, we are going to—at least we are intending to—earmark funds specifically for such planning activity. We do thank you. I wish we had more time, but I guess when they show me that lineup of witnesses they have today, we are just going to have to move along.

Mr. WIRSZUP. I appreciate every minute, Senator. Thank you.

Senator ABDNOR. It was a pleasure to have you here.

[The statement follows:]

STATEMENT OF IZAAK WIRSZUP, PROFESSOR OF MATHEMATICS, UNIVERSITY OF CHICAGO

I am most grateful for your invitation to testify once again before this Committee on the National Science Foundation and crucial issues in U.S. mathematics and science education. As Chairman of the Committee, Senator Garn, you have shown exceptional understanding and foresight concerning these issues and their effect on the American economy and national security. In 1981, you acted to prevent the dismantling of the NSF Directorate for Science and Engineering Education, which would have caused irreparable damage, and last year you were instrumental in the Senate's $75,000,000 appropriation to help the Directorate increase the scope and effectiveness of its programs aimed at resolving our educational crisis. For this, the U.S. science and educational communities are indebted to you and the Committee.

The United States is now facing one of the sternest challenges in its history. On the one hand, the U.S. is still acknowledged as the world leader in science and technology. We are a nation whose scientific elite has for the past 50 years years been in the forefront of research and discovery, whose major universities and training programs are a magnet for students, scholars, and scientists from around the world. America's economic power has converted scientific and technological breakthroughs into top-quality, mass-produced consumer goods and services; its medical achievements have made possible superb health care and offered a model for other countries. The U.S. has also developed a system of civic education that is among the very finest in the world. Nevertheless, American elementary and secondary education, especially in the areas of science and mathematics, is in dangerous condition.

Over the past two decades, many industrialized nations, such as Japan and the countries of Western Europe, and even emerging countries, such as Korea and Taiwan, have recorded outstanding achievements in the education of the general population. Since 1966, the communist-bloc countries have launched an educational mobilization, adopting general education standards and technical training programs of unmatched quality and magnitude. During this same period, the overall achievement levels of American secondary school graduates have not only failed to rise, but actually plummeted. The same downward trend can be seen in literacy and basic skills, where levels which may have been sufficient for survival years ago are totally inadequate in today's world. In brief, the educational level of the American citizenry is already having a damaging effect on our productivity and general economy. Furthermore, no matter how much we invest in military technology, educational decline will continue to undermine our national defense.

It is ironic that our high schools are now producing graduates who, in the majority, are intellectually remote from the great American accomplishments in space exploration, nuclear power, computers, and other technological wonders of the twentieth century. Today most Americans lack the science training to understand the essence of these achievements, and few can share in the excitement of scientific discovery on any level.

After the December 1979 report on Soviet-American comparisons in mathematics and science education and technical training, it took nearly four years for the Nation to start to respond to our educational crisis. In a historical context, of course, this is not a long time. But for today's rapidly changing world, too much time has already been wasted.

Fortunately, awareness has already inspired a number of grass-roots movements involving parents, teachers, and leaders of industry and government. We are now witnessing a period of increased hope and expectations on the part of the American public. Various national committees and institutions have addressed the educational crisis in reports, such as A Nation at Risk: The Imperative for Educational Reform by the National Commission on Excellence in Education. Studies sponsored by private foundations and by individual scholars have also appeared. These reports have been prepared and written with great care and effort and motivated by the best of intentions. Among the topics treated are basic literacy and basic mathematical skills, thinking and writing abilities, problem solving, teacher shortages, teacher competence and salaries, homework, length of the school day and year, and increased high school graduation requirements. School discipline (including crime in the schools), school dropout rates, and textbook quality have also been discussed.

One could cite many examples of society's constructive involvement in educational improvement; many of the recommendations of the reports are in fact now being implemented in schools throughout the country. In some school districts basic reading, writing, and mathematics test scores have increased several points; even Scholastic Aptitude Test (SAT) scores are no longer decreasing.

While these positive developments should be encouraged and expanded, we must not lose sight of the global picture. These are improvements in a relative sense, on a relative scale. To believe that we are taking adequate measures to resolve our national educational crisis would be a dangerous complacency, an illusion. In the international scheme of things these changes are essentially negligible. It is on a world-wide scale that we must measure the state of U.S. education vis-a-vis that of other nations, in particular our economic competitors and military adversaries.

A Brief Review of the Educational Crisis

The seriousness of our educational crisis was first made clear by comparative studies of American and Soviet elementary and secondary mathematics and science education and technical manpower training programs. It may therefore be appropriate to review a few of these striking comparisons to illustrate the enormity of our predicament.

The current secondary school graduation rate in the Soviet Union is 98 percent, in Japan 95 percent, and in the U.S. only 73 percent. A typical Japanese graduates from high school with roughly four more years of education than an average American high school graduate. Even more telling than these general statistics are comparisons of programs and enrollments in specific subject areas.

- Of some 4 million American students who reach the age of 17 each year, at least 70% have been taught arithmetic for 9 years. Since such repetition takes no account of their developing abilities, our students emerge from this demoralizing experience without the inclination or ability to pursue secondary school algebra and geometry, the hard sciences, or technical-vocational training. In almost all other industrialized countries, children complete arithmetic in six years; in the USSR and the Soviet-bloc countries of Eastern Europe, arithmetic, in combination with intuitive geometry, is taught in the first five grades.

- Comparisons in geometry are even more disturbing. Only half our students take any plane geometry. Most of them never master it, because we attempt to teach it in a "packaged" one-year course, at an advanced level, to students with inadequate preparation, even though empirical evidence and modern educational psychology tell us emphatically that we cannot. And since our high school students are not being taught solid geometry, they rarely have the workable perception of three-dimensional space that is essential to many areas of science, technical design, and engineering. In contrast, Soviet students study geometry continuously over a 10-year span: intuitive geometry in the first five years, semi-rigorous plane geometry in grades 6 through 8, and solid geometry in grades 9 and 10.

- While the great majority of Americans are struggling with nine years of arithmetic, Soviet students are working through a challenging and comprehensive compulsory mathematics curriculum that comprises six hours per week in grades 1 through 8 and five hours in grades 9 and 10 (a total of nearly 2,000 class hours over ten years). In this ten-year period the Soviet program covers the equivalent of at least 13 years of the best American schooling in mathematics, and does so much more thoroughly and effectively, culminating in a calculus course taught in grades 9 and 10.

- American secondary school physics, another building block of science education and technical training, is in extremely poor condition and must be changed radically. Less than one sixth (16 percent) of our high school students take even a one-year course in this discipline, while in the USSR all secondary school students take a compulsory five-year sequence of physics courses. For some 16,000 U.S. school districts the total number of full-time physics teachers (many of whom have never received specific subject training in physics) is 8,000 and shrinking rapidly. The total number of physics teachers in Soviet general education day schools alone is 119,000 and the USSR trains another 8,500 specialized physics teachers every year.

- The pattern continues in other subjects. In chemistry, only a third (35 percent) of our high school students take a one-year course, while all Soviet students complete four years of chemistry, including a full year of organic chemistry. Soviet students also receive six years of compulsory training in biology, one year of astronomy, three years of mechanical drawing, and ten years of workshop and technical training.

- Our educational crisis is by no means limited to mathematics and the sciences. Only 16 percent of our students receive any exposure to geography as a separate subject, mostly in the form of a one-semester course. Geography training has all but disappeared. In the Soviet Union, on the other hand, all students take a five-year sequence of courses in the physical, economic and political geography of the USSR and the world. The total number of geography teachers in the Soviet general education day schools is 94,000, and 6,000 specialized geography teachers are being trained every year.

- All Soviet children are obliged to take seven years of a foreign language, while fewer than 18 percent of U.S. public high school students study any foreign language, and fewer than 4 percent receive more than two years of foreign language study.

Two recent comparative studies have offered additional evidence of a serious decline in U.S. education.

The Dallas Times Herald originated a series of tests involving sixth-grade students in major cities in eight industrialized nations. It prepared and conducted the testing in a highly professional way, seeking the advice of experts for the examinations and analyses, looking for new viewpoints, and exploring various aspects of our educational crisis.

The tests, the results, and a wealth of other material were objectively and comprehensively described in December 1983 in that paper's Special Report, "American Education: The ABC's of Failure."

In mathematics American children placed last among participants. The Japanese students scored twice as high as the Americans. Our students did not do much better in science or geography. For example, 20% of Dallas sixth-graders from a higher income neighborhood could not locate the United States on a world map.

There has been a persistent belief, even among American educators, that while the bulk of our population may not be receiving the best education, our top students are as good as the top students anywhere in the world. This contention was recently refuted by a study at the University of Illinois at Chicago conducted by Herbert J. Walberg, Delwyn L. Harnisch, and Slow-Long Tsai. Fifteen-, sixteen-, and seventeen-year-olds from Japan and from Illinois took the High School Mathematics Test developed by Educational Testing Service; the results led the research team to the following conclusions:

> An "average" Illinois high school mathematics student when matched against 100 of his Japanese counterparts, would rank 99th.
>
> Of Illinois high achievers in mathematics, only 1 in 1,000 does as well as the top 100 out of 1,000 Japanese students.

In sum, the vast majority of our high school students have not studied physics, chemistry, geography, or a foreign language, and have had only a modicum of mathematics. Not only do they lack a solid foundation for further training; they cannot even apply basic mathematics and science to simple jobs. This results in a personal tragedy of shattered hopes for countless young Americans. It is also a national tragedy, for it diminishes America's overall position in the world and places a tremendous burden on the economy and society, which must bear the staggering costs of unemployment; on industry, which must invest huge sums even for narrow, short-term training; and on institutions of higher learning, which must provide costly remedial courses.

These brief comparisons indicate a particularly dangerous gap between our educational standards and those of the Soviet Union. Even in this twenty-seventh year since the launching of the first Sputnik, it is not generally recognized that the USSR's expanded exercise of power is based on more than just the military arms buildup of the past two decades. Its concurrently developed science education and manpower training programs have created a military-industrial machine manned by highly skilled and educated personnel. The Soviet Union's outstanding achievements in the education of the general population and development of a vast manpower pool in science and technology are having an unprecedented impact on that country's scientific, industrial, and military strength.

The Defense Department's report "Soviet Military Power" released last month by Secretary Caspar Weinberger investigates the Soviet Union's tremendous military arms buildup. The Secretary's report might also have adduced comparative data on the educational background and training of Soviet and American recruits. For the fact is that every Soviet soldier completes one of three versions of their compulsory secondary schooling and has at least 3-4 years more study in mathematics, physics, chemistry, technology, geography, and a foreign language than an average American recruit.

Our continuing educational crisis represents a challenge much more dangerous and far more difficult to overcome than the quantity and quality of technical weaponry at the disposal of the Soviet military machine.

As the United States languishes in an educational backwater with no major national commitment toward essential reforms, our disadvantage with respect to the Soviet Union can only increase. Meanwhile, the Supreme Soviet of the USSR has adopted a resolution (April 12, 1984) calling for continued comprehensive improvements in its elementary and secondary schools and an ambitious expansion of its technical-vocational training programs. Among the most important changes to be effected are the following:

1. Compulsory secondary education will be extended by one year, i.e., the 10-year secondary general education school will be replaced by an 11-year school; children will start school a year earlier, at age 6 rather than 7;

2. Far more emphasis will be placed on increasing the ranks of skilled workers by greatly expanding the system of technical-vocational schools;

3. The content of existing school curricula and textbooks will be reworked, and improvements made in teaching methods, with an orientation toward practical applications;

4. Summer vacations will be shortened and children put to work;

5. Teacher salaries will be raised.

In addition to this 10% increase in the time allocated to compulsory general education, the changes which will have a direct and major effect on Soviet manpower needs in high-technology industry and the military are those slated for the technical-vocational schools. Under the existing system, the educational common denominator for all Soviet youngsters is the 8-year school. On the basis of academic performance and examination results on completing grade 8, students are channeled into one of three separate educational tracks: a) the academically strongest (50% at present) continue their general education in grades 9 and 10; b) another 10% are admitted, on the basis of entrance examinations, to technicums—secondary specialized schools which train white-collar technicians and middle-level professionals (including teachers for grades 1-3); and c) the remaining 40% enroll in the technical-vocational schools (professional-technical schools, or PTUs), which train skilled workers.

An important feature of the recently adopted reforms is that students will be channeled along the various educational tracks after completing 9th, rather than 8th, grade. This will give skilled workers and technical personnel, who already have a solid training, one more year of general education. The percentage of students channeled into technical-vocational schools will also change drastically, from the present 40% to 60%. This will be effected primarily by decreasing from 50% to 30% the number of students allowed to continue in grades 10 and 11 in the general education schools.

To grasp the full implications of the new reforms, we need to remember that the USSR's educational system is the product of planning, persistent and disciplined effort, and experimentation, evaluation, and investment spanning over half a century. The Soviets' first "educational mobilization," begun in 1966, was in response to demands for workers and soldiers with a better understanding of scientific and technological principles. The curricular reforms resulting from this mobilization were radical, and achievement standards extremely high; the mathematics curriculum included, for example, two years of compulsory training in calculus for the entire population. No nation outside the communist bloc has ever attempted this. The resulting programs, representing too radical a departure from long-established traditions in Soviet education, were often too ambitious and sophisticated, creating tremendous difficulties for overworked students and teachers. This led in the early 1970's to calls for improvements. The open, often heated discussions in the USSR Academy of Sciences from 1979 on paved the way for the decisions of April 1984. The educational reforms recently enacted should be viewed as changes designed to make the existing programs work more efficiently, to increase student achievement. In terms of general education, the new reforms are designed to raise educational standards even further while solidifying curricular gains introduced after 1966, and to direct the programs more towards applications.

The increasing role of general education in Soviet manpower training programs is based on the Soviets' belief that the boundary between physical and mental work will disappear in the near future, as routine manual labor is taken over by robots.

In summary, it is useful to view the Soviet educational reforms just enacted not as a departure from the existing multitrack system, but as a further expansion and improvement of the system, emphasizing the successes of previous manpower training programs.

The number of white-collar technicians and skilled workers already being trained in the Soviet Union is without equal elsewhere. In 1982, for example, Soviet technical-vocational schools turned out 2,526,000 skilled workers, of which 1,409,000 were graduates of the so-called secondary technical-vocational schools and technical schools. The same year, Soviet technicums graduated 793,000 middle-level professionals in engineering, agriculture, and management.

The term "secondary," as applied to the technicums or the modern technical-vocational institutions, can be misleading. These schools actually represent a much higher level. In professional-technical and science-mathematics content, their programs correspond to between 2 and 3 years at an average U.S. technical institute or college. Hence in 1982, the Soviets prepared a total of some 2,200,000 skilled workers and white-collar technicians with such training. The same year, the Soviet Union produced the following numbers of certified engineers with training equivalent to our masters in engineering programs: 310,700 in industry and construction; 42,800 in transport and communications; 81,000 in agriculture (where emphasis is placed increasingly on advanced agricultural technology).

The recently announced reforms, for which the Soviets have already budgeted $14.3 billion, will involve large-scale construction of new secondary technical-vocational schools to accommodate the tremendous increase in the number of students assigned to this track. The resolution calls for classroom size to be limited to 25-30 students. $4.5 billion per year has been appropriated for teacher salary increases. The reforms will continue through the next two five-year plans.

Recommendations

The comparative studies and other corroborated evidence clearly show that there is a formidable challenge to America's present position and future as a nation. In order to reestablish and then maintain our country's scientific and technological superiority and industrial and economic vitality, and to develop a strong national defense, we must raise the nation's general level of educational achievement by three to four years—equivalent to the level already achieved by secondary school graduates in Japan, the Soviet Union, Eastern Europe, and even South Korea and Taiwan.

Resolving our educational crisis will be an undertaking of unprecedented magnitude. It is evident that the policies and measures instituted to date do not begin to approach the changes needed. The only answer is a federally-sponsored national mobilization for education and a coordinated mobilization in each of the states. This will require a sustained effort by all segments of our society, private and public investment and sacrifice, and, above all, imaginative and engaged leadership at all levels of government.

In spite of the USSR's tremendous achievements, I do not recommend that we adopt the educational goals or practices of the Soviets' dictatorial regime. Nor should we attempt to imitate the highly successful centralized system used in Japan. We have a decentralized system that is in many ways the highest expression of freedom and democracy. We must preserve that system and make it more efficient.

In addition to substantial improvements in the recruitment, training, and overall situation of teachers, the highest priorities are major curricular reforms and long-term structural changes. Here are only a few of many possible recommendations in this direction:

- We must concentrate more on education and training in the first eight years of schooling and establish requirements for graduation from primary school. Unfortunately, too much is left to high schools, which in four years at best cannot achieve what children in other nations do beginning in the earliest grades.

- Develop a completely new mathematics program for all children, covering all of arithmetic in the first six years of school. Intuitive geometry should be an integral part of the new program from the first grade on.

- Allow only specialized teachers to teach mathematics and science courses from grade five on.

- Replace the "packaged" one-year geometry course with a three-year sequence in plane and solid geometry (three hours per week).

- Make optimal use of calculators and microcomputers in the new mathematics program. The ready availability of these tools in the United States should be exploited to greatest advantage at all educational levels, starting in the primary grades. In high school, offer separate courses in computer science and statistics and probability, in addition to the existing courses in advanced algebra and calculus.

- Replace the "packaged" one-year course in physics with a three-year sequence (three class hours per week) developed according to the latest level-by-level theories of learning. Our one-year chemistry course should be replaced by a two-year sequence.

- Introduce a new sequence of courses on "Technology and Engineering" (two to three hours a week for up to four semesters), begun in grade nine and offered to all students in all school systems. Whenever possible, the curriculum should combine theoretical and practical studies, ideally using modern, well-equipped shops and laboratories at nearby industrial or commercial enterprises.

- Organize new programs and expand existing ones (such as summer programs) for the discovery and training of mathematically talented children from the earliest possible age.

- A prerequisite for all changes, of course, is basic literacy (since the 1950's the U.S. has dropped from 18th to 49th in a literacy rating of the 157 members of the United Nations). Innovative courses, sophisticated textbooks, and superior professional guidance will all go for nought if students are unable to read or write. It is therefore essential that we upgrade the high school graduation requirements for English to four meaningful years. To help create a global perspective and provide the background for an understanding of international relations and foreign cultures, geography (two years), foreign language (two years), world history, and economics should also be included among basic requirements. It might be noted that teachers of English in the Soviet Union outnumber students of Russian in this country.

- Expand our research community in the psychology of mathematics and science instruction. If we are to accomplish the curricular reforms outlined above, and stimulate and coordinate research efforts, we must create a national R & D center for mathematics learning (not combined with science). The new center should be established at an institution of higher learning, or a consortium of institutions, selected on the basis of quality and the greatest promise of active participation by a range of outstanding mathematics educators, research mathematicians, and specialists in the psychology of learning and teaching mathematics. Similar separate R & D centers for physics, chemistry, and other disciplines should also be established.

- Institute a program for the development of a literature on teaching methodology for all subjects at all levels of the primary and secondary school system. This literature should address both content of instruction and teaching methods. It should make use of the classroom experience of outstanding teachers, modern research in the psychology of learning and teaching, and the theory and use of instructional materials, including audio-visual teaching aids, calculators, and microcomputers. A comprehensive literature of this kind, developed over a long period of time and continually revised and improved, is being used in all communist countries to assist inservice and preservice teachers. Such a literature is completely lacking in the United States.

- Conduct research on the theory, design, and application of various aids--principally visual—in elementary school mathematics instruction. The premise is that much of the available equipment, both older and more recent, has been rendered obsolete by advances in mathematics and psychology. Even such modern tools as filmstrips and slides must be reevaluated in light of new educational goals and conditions. Newly designed equipment has to be subjected to rigorous experimental testing in schools.

- Seek new ways to come to grips with the tremendous shortage of teachers trained to teach mathematics or science. This will mean an even greater reliance on microcomputers, video, and other technology for computer-assisted instruction. Further, we must make more extensive and intelligent use of our abundant instructional resources by committing ourselves to continuous research and experimentation in the psychology of learning and teaching.

- Accompany these comprehensive organizational and curricular reforms with research and development programs, giving special attention to integration of the sciences, particularly in their relation to mathematics. This research should be applied to the interrelationships of subjects and the establishment of a logical order of presentation in school curricula at each level.

- Create permanent national curriculum centers and a national review board in science and technology. These bodies should include the nation's top scientists and engineers with educational expertise, researchers, outstanding teachers, educators, and psychologists. They would supervise the development of new curricula and review the implementation of programs and text materials.

Some commentators have remarked on the failure of efforts to make lasting improvements in education in the period after Sputnik. If one examines the facts, the efforts have had only limited effect for two reasons above all: these reforms were geared to the more able student, and the impulse was not sustained, perhaps because of an erroneous belief that a short-range or one-shot effort could solve deep-seated long-term problems. This is in sharp contrast to Soviet or Japanese programs developed over a period of decades.

The Role of the Federal and State Governments in Education

The Federal Government. Comparative studies and other evidence of our educational crisis have now been available for over four years. One would hope that this information will spur the national leadership to call upon experts and representatives from science, education, and all areas of society and government to mount a nationwide mobilization for education. Such an effort could produce an agenda for a sustained drive in crucial areas where we are particularly deficient, and, by global standards, increasingly out of step. Foremost among them are curricular reform and the complex area of teachers—training, competence, recruitment, salaries, and the teacher's role in school and society.

These are issues that must be confronted, and the most urgent is retraining. The responsibilities and treatment of teachers are broader societal issues which nontheless also deserve scrutiny and action by government at every level.

Appropriate compensation, discipline, and safety are, of course, basic prerequisites for the functioning of any school system in a civilized country, but these are not in themselves sufficient conditions for higher academic achievement. The whole emphasis on the "basics"—reading, writing, and arithmetic—is similarly misplaced. While such minimal skills might have sufficed for the nineteenth century, they are not adequate goals for today's Americans, who need a foundation for understanding the complex scientific, technical, and socio-economic phenomena that pervade modern life.

As a national concern, education is as vital as defense and foreign policy, and, like them, it requires national leadership. The first step one could expect is the establishment of national guidelines for academic achievement, so that Americans know what the goal is for everyone. The federal authorities responsible for education have not yet taken this step, nor indeed shown any decisive leadership. Instead, they have left everything to the states, in effect dodging the entire matter of national educational leadership by issuing block grants.

State Government. Our decentralized system of education is an organic part of American democracy, and urgent efforts must be made to improve it. Local, district, and state school boards should retain primary authority for the educational process within their schools. There are extremely important problems which local and state authorities are best equipped to solve. However, some of the crucial issues referred to earlier cannot be handled adequately by the individual states.

Leaving to states and local school boards major decisions concerning complex programs and curricula and their practical implementation has brought to the fore conflicting interests, and, in some states, almost insurmountable difficulties. This policy has produced very mixed results, and even exacerbated the great and unhealthy educational differences that already exist among various states.

In states blessed with forward-looking governors and superintendents who work closely with their legislatures, or in states where strong societal coalitions have been created for the improvement of education (e.g., The California Business Roundtable, which fought successfully for $800 million in tax-based aid to education), much is being accomplished indeed. However, in states which do not possess the exceptional leadership nor resources and expertise needed to effect vital changes, and in states which are plagued by serious financial difficulties, the results are very different. In some of these states, citizens' campaigns have yielded certain limited reforms. But the "reforms" are frequently cosmetic, and in some cases, they are simply misleading.

Without educational achievement guidelines from the federal government, developments already underway in individual states could actually prove damaging for future generations. In one state, for example, the requirements for graduation from high school for the class of 1988 have been formally raised to include two years of mathematics and one year of science. The requirements themselves, however, have not been specified. Therefore, without deviating from the letter of the law, a high school student could take (as millions are doing now in high schools across the country), "Business Mathematics," "General Mathematics," and "Consumer Mathematics," which amount to little more than arithmetic and a few of its applications. The result would be that a student in that state could graduate from high school in 1988 without ever having studied algebra, geometry, physics, chemistry, geography, or a foreign language, and with a background totally insufficient for any further study, or even for basic vocational training.

The NSF Directorate for Science and Engineering Education

Thanks to this Committee's generous budgeting for FY 1984, the NSF Directorate for Science and Engineering Education has been able to rebuild its staff and organize program activities along the guidelines stated in the Committee's Appropriation Bill of June 14, 1984.

The Directorate has conducted the following programs:

Graduate Research Fellowships to promote the Nation's future scientific endeavors by recognizing and supporting its most promising graduate students;

Precollege Science and Mathematics Education, with special attention given to:

a. precollege instructional materials development and demonstration activities;

b. enhanced undergraduate education for precollege teachers, and broader inservice training through local and regional workshops;

c. research in the psychology of learning and teaching processes. I might add, Senator Garn, that your allocation of part of the budget to research in the application of cognitive studies was especially welcomed by educational scholars.

Utilizing the Foundation's—and its own—special strength of close working relationships with academic institutions and the scientific community, the Directorate has been able to support creative ideas from around the country, and to award funding on the basis of quality and merit.

The Directorate has taken a very responsible approach to program development, striving for maximum benefits and accountability from the projects it supports. In summary, it has been doing its utmost under the circumstances in this year of renewed and expanded activities. In my judgment, the Directorate has amply fulfilled its promise and fully deserves the support it has requested for FY 1985, especially for two new programs it has instituted:

1. A program within Precollege Materials Development and Research to provide for research and development in the application of advanced technologies—particularly the computer—as educational tools for students and their teachers;

2. The whole Precollege Teacher Development and Incentives Program, including:

a. local and regional programs of continuing education and professional development for precollege science and mathematics teachers;

b. annual recognition of outstanding secondary school teachers through Presidential Awards for Excellence in Science and Mathematics teaching;

c. honors workshops for selected precollege teachers.

The Directorate counts on this Committee's generous support, support I believe it has earned.

At this juncture we might stop and ask ourselves some basic questions: Is the Directorate's potential being used to the fullest? Is the Directorate conducting the curricular reforms and large-scale teacher training programs necessary for resolving our educational crisis? Will the scope of the programs currently conducted by the Directorate bring us to one of its major stated goals, namely "providing the Nation's youth with a level of education in mathematics, science, and technology that reflects the needs of the Nation and is the highest quality attained anywhere in the world"?

Regrettably, none of these questions can be answered in the affirmative, as I believe my testimony today has made clear.

The Directorate for Science and Engineering Education has a proud history and a notable list of achievements; it has gained tremendous experience and expertise, not to mention an exceptional degree of respect across the Nation. It has the fullest support and cooperation of the NSF leadership and all of its divisions. It can rely on the advice and guidance of the National Science Board, whose Commission on Precollege Education in Mathematics, Science, and Technology last year prepared a most realistic, constructive, and action-oriented report, Educating Americans for the 21st Century. Perhaps most importantly, the Directorate is also in close contact with the scientific and educational communities, including the National Academy of Sciences and a spectrum of scientific and educational associations. Together, all these relationships offer the potential for a unique national repository of scientific strength, expertise, and educational values, but this potential is not being fully utilized.

I am therefore making another appeal, Senator Garn, that you and this distinguished Committee lead a bipartisan effort to launch a national mobilization for education.

In view of present budget deficits and the need to prepare the Congress, the Executive, and the Nation for this enormous undertaking, I appeal to you not only to support the Directorate's proposed activities for FY 1985, but also to request that the Directorate develop a 1986 agenda that includes both long-range goals and specific and immediate steps to offer our youth the best education in the world and meet our country's greatest challenge.

The University of Chicago School Mathematics Project

In view of the absence of detailed national guidelines for precollege mathematics achievement and the paucity of curriculum improvement and teacher training programs, I am particularly pleased to report here today on an exciting and significant development. I am speaking of a partnership between a major American industrial corporation and a major university to undertake a highly innovative mathematics pilot program for Chicago-area schools.

Senator Garn, in opening the hearings of your distinguished committee last May, you expressed a number of ideas concerning ways in which the private sector can and should help to resolve our educational crisis. The evolution of this project has closely followed those well-stated principles. It is especially appropriate to raise this matter at today's hearings on the National Science Foundation, for it was work done under the auspices of the NSF Directorate for Science and Engineering Education which served as the catalyst for this unique project.

What we are attempting to do at the University of Chicago is respond to crucial problems in school mathematics education with a wide-ranging six-year project. The effort is being generously supported by the Amoco Foundation (Standard Oil of Indiana). Executives and scientists at Amoco familiar with the 1979 studies in international mathematics education produced by the University's NSF Survey of Recent East European Mathematical Literature had discussed the development of a pilot program that could implement some of my recommendations for new curriculum design, instructional strategies, and teacher training. A University of Chicago faculty committee spent a year designing such a program, to be conducted jointly by the University's Departments of Mathematics and Education. In September 1983 Amoco awarded the University a grant for the first year of what we plan as a six-year program.

The program has assembled a rare combination of talent and resources from the University of Chicago, other universities, local school systems, and industry. The principal goal is to design and implement a far-reaching applications-oriented mathematics program for all students.

As of the middle of Project Year 1 (October 1, 1983 - September 30, 1984), the program already involves nine university professors, 15 teachers, and over 400 students in grades K - 2 and in grade 9 in six Chicago-area public schools. Among its long-term objectives is the development of a prototype K - 6 curriculum covering all of arithmetic and teaching intuitive geometry. This curriculum, designed for all students, will be accompanied by appropriate new instruction media, including textbooks, videotapes, and computer software. Microcomputers and computer-assisted instruction will be applied from kindergarten on.

At the middle level a 7th grade transition mathematics course, comprising arithmetic, algebra, and geometry, is already being developed. Its purpose is twofold: a) to help the many students who, for various reasons, have not mastered arithmetic, and give them another opportunity for further study of mathematics and career development; and b) to prepare the vast majority of students for algebra in grade 8. Such preparation would allow secondary schools to offer the most effective applications-oriented mathematics program for the mainstream (i.e., the middle two thirds) of our school population. This program for grades 8-12 will comprise two years of algebra, one year of geometry, one semester of probability and statistics and one of computer mathematics, and one year of senior mathematics. In combination, this sequence of courses should provide ample preparation for training in scientific and technical professions or indeed for further study in any college program.

In developing new curricula and instructional media, the University of Chicago School Mathematics Project will utilize the best materials from American, West European, Japanese, Soviet, and other sources. The University of Chicago project is fortunate in having at its disposal the extensive mathematics education collection of the NSF Survey of Recent East European Mathematical Literature. The vast resources at this library offer a rare opportunity for American curriculum developers to capitalize on years of foreign educational research and experimentation.

As a privately supported program to benefit schools in a major metropolitan area, the UCSMP is virtually unique in range of operations and breadth of expertise. It has been meticulously designed to yield an educational model for wider implementation and an example of imaginative and forward-looking cooperation between corporations and universities.

The UCSMP is headed by Project Director Paul J. Sally, Jr., Professor of Mathematics, Principal Investigator Charles E. Bidwell, Chairman of the Department of Education, and Principal Investigator Izaak Wirszup, Professor of Mathematics. Also among the University of Chicago faculty directing UCSMP components are Professors of Education Max S. Bell and Zalman Usiskin. The program's advisory committee includes Professors Benjamin S. Bloom and Jacob W. Getzels, both members of the National Academy of Education, and Professor Felix E. Browder, a member of the National Academy of Sciences.

The University of Chicago has affirmed its responsibility to elementary and secondary education and its commitment to the UCSMP. We hope that this partnership between the University of Chicago, Amoco, and Chicago-area schools will provide a model for the State of Illinois and the Nation.

Thank you.

STATEMENT OF FR. T. BYRON COLLINS, SPECIAL ASSISTANT FOR FEDERAL RELATIONS, GEORGETOWN UNIVERSITY

Senator ABDNOR. Our next witness is Father T. Byron Collins, special assistant for Federal relations, of Georgetown University.

Father Collins, we welcome you to the committee this morning.

Fr. COLLINS. Good morning, Senator.

Senator ABDNOR. Yesterday I had a visit with Father George who was up on other problems.

Fr. COLLINS. He mentioned it.

I will be very brief. This concerns the college housing loan fund which was under the jurisdiction of this committee for years. When the Secretariat of Education was created, it was transferred to the Appropriations Committee for the Office of Education. It is a revolving fund. It was one of the best programs the Federal Government has put in place; 2,000 colleges and universities are in it.

We borrow money, Federal money, and put up our dormitories. The income from the dormitories pays it off.

A large portion of this was given to Government National Mortgage Association (GNMA), who put it out on the market. The funds, therefore, were returned to the Treasury. In 2 years, there will be a large repayment of the funds that will be coming into GNMA. In the Office of Education, the documents attached show, there is communication between the Secretary and the President of GNMA. I would like to ask the committee to encourage GNMA, which has the expertise, to assist the Office of Education to plan properly for this large bulge return.

That is the sum and substance, Senator Abdnor, of my remarks. If there are any questions, I would be delighted to answer them.

Senator ABDNOR. Thank you, Father Collins.

First let me say I assure you your entire statement is going to be made part of the record. The subcommittee has added 100 new NSF fellowships, I just wanted to mention that, above the request required for fiscal year 1984. This year, the Foundation is requesting that that 1984 level be reduced by 50 fellowships. I assure you we are going to continue our support for both the number of fellowships and the increased stipends.

I don't think I am going to comment on the GNMA issue. I would be happy to have the chairman do that. I might make some statement that I couldn't back up with him. We assure you we are going to talk to the Department and look into this. We appreciate your bringing it to the attention of the committee.

Fr. COLLINS. Thank you, Senator. Thanks.

Senator ABDNOR. We thank you very much for your testimony here today. Thank you, Father.

[The statement follows:]

STATEMENT OF REV. T. BYRON COLLINS, S.J., SPECIAL ASSISTANT TO THE PRESIDENT OF GEORGETOWN UNIVERSITY

Mr. Chairman and members of the Committee, I am Rev. T. Byron Collins, S.J. Special Assistant to the President of Georgetown University.

I would like to thank the Committee for its support of a pilot program using a nuclear magnetic resonance instrument at a local hospital.

Because of the Committee's support, Georgetown University's hospital has been able to work within the procedures of the Department of Health and Human Services for the installation of a nuclear magnetic resonance diagnostic imager. This will provide better and safer diagnoses than those currently available with X-rays or CAT-scans. Moreover, the use of this advanced technology diagnostic instrument will be made available within the fee schedules approved by Medicare at no additional cost to the Federal government.

We strongly support the President's FY 1985 Budget for Higher Education Programs for the National Science Foundation. We would also like to request a substantial increase in support for the National Science Foundation's Graduate Research Fellowships Program. While the Administration has requested a 3% increase in funding for this program from $20.3 million in FY'84 to $21 million in FY'85, this is still not sufficient to meet the growing need for essential scientific research and scholarship. Georgetown University, together with other colleges and universities in the District of Columbia, receives essential research grant and fellowship support from the National Science Foundation as do most colleges and university's throughout the country.

As you know, Georgetown University testified before this Committee on the College Housing Loan Program before jurisdiction over the program was transferred from the Department of Housing and Urban Development to the Department of Education. Last year's House Report on Labor/HHS/Education Appropriations shows that there may be a capability for the Government National Mortgage Association (GNMA) to refinance the College Housing Loan Program:

> Under the College Housing Loan program, authorized by title IV of the Housing Act of 1950, loans are made to postsecondary institutions for energy conservation, construction, or acquisition of student housing facilities. Loans bear an interest rate of 3 percent and have terms of not more than 40 years. Funding for this program was initially provided through $2.8 billion in permanent Treasury borrowing authority and by an additional $2.2 billion made available through the sale of participation certificates. Since 1977, funding for new loan commitments has come from interest income and loan repayments in excess of annual operating expenses. Loan repayments and other income returning to this account are used to pay operating expenses associated with prior year loans. These expenses include: (1) interest owed to Treasury on borrowed funds used to make loans in prior years; (2) loan servicing and management expenses paid to the Federal Reserve Bank and Government National Mortgage Association; and (3) principal and interest payments to GNMA's participation sales fund to retire the outstanding debt on participation certificates.
>
> The committee notes that the 1984 budget hearings on the College Housing program the Department [of Education] was requested to provide the opinion of the General Counsel on the question of whether the Department has the authority to refinance the GNMA notes due in 1987 and 1988. (House Report 98-357 pp124,25)

The attached letters from the Department of Education and the Department of Housing and Urban Development confirm that an authority does exist to refinance GNMA notes. (Exhibit) We would like to request that the Committee direct GNMA to work with the Secretary of the Department of Education to develop a feasible plan for continuing the College Housing Loan Program which has been of enormous benefit to students by making affordable housing available to them at more than 2,000 colleges and universities across the country.

On behalf of our President, Rev. Timothy S. Healy, S.J., I wish to express our gratitude for this opportunity to testify before your committee.

UNITED STATES DEPARTMENT OF EDUCATION
OFFICE OF THE DEPUTY UNDER SECRETARY FOR PLANNING, BUDGET AND EVALUATION

FEB 23 1984

The Honorable Silvio O. Conte
House of Representatives
Washington, D.C. 20515

Dear Mr. Conte:

This letter is in response to your question, submitted at last year's appropriations hearing on the President's 1984 budget request for the College Housing Loans (CHL) program, regarding the possible refinancing of the program's participation certificates (PCs) held by the Government National Mortgage Association (GNMA).

Specifically, you submitted the following question:

> "Does the Department [of Education] have the authority to refinance GNMA notes to 30 years?
>
> Would you ask your legal counsel for an opinion as to whether the Department has the authority to refinance the GNMA notes to 30 years and submit it to this Committee as soon as possible?"

I apologize for the extreme delay in responding. Over the last several months, members of my staff have been in contact with Mr. Jim Kulikowski of your staff regarding the principal reason for the delay. As Mr. Kulikowski may have informed you, initially there was some question regarding the Department of Education's (ED's) jurisdictional authority for rendering an opinion on PC refinancing. My office was subsequently advised by the Department's General Counsel that it would, in fact, be inappropriate for this agency to construe the statutory language (and to subsequently advise you) on PC refinancing under a statute that vests authority for both the marketing of the certificates and for the maintenance of redemption trusts in another agency. Accordingly, we promptly requested counsel from the more appropriate agency -- GNMA.

Mr. Robert W. Karpe, President of GNMA, wrote to me on January 31 with his agency's opinion on PC refinancing under the CHL program (see enclosed letter). In part, Mr. Karpe advised me that if "the principal and interest payments of the loans backing the PCs...are insufficient to pay...to retire the PCs in full," then GNMA does have the statutory authority to refinance. Mr. Karpe further advised me, however, that given ED's present course of funds transfers to the GNMA participation sales fund, there will be sufficient funds available by 1987-88 to effect full redemption of the PCs on schedule.

Mr. Karpe further emphasized to me that "[a]s the Department of Education does not have issuing authority, any refinancing of PCs must be done exclusively by GNMA." In other words, while ED could request a PC refinancing, the final decision on any such refinancing would be made by GNMA on the basis of its asssessment of the CHL program's ability (or inability, as the case may be) to meet the current PC amortization terms and the reasons for any alleged inability to meet those terms.

If you need additional information or have any further questions, please do not hesitate to let me know.

Sincerely,

Gary L. Bauer

Gary L. Bauer
Deputy Under Secretary for
Planning, Budget and Evaluation

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
WASHINGTON, D.C. 20410

3 1 JAN 1984

PRESIDENT
GOVERNMENT NATIONAL MORTGAGE ASSOCIATION

Mr. Gary L. Bauer
Deputy Under Secretary for
Planning, Budget and Evaluation
Department of Education
400 Maryland Avenue, S.W.
Washington, D.C. 20202

Dear Mr. Bauer:

This responds to your inquiry from Congressman Silvio Conte as to whether the Department of Education has the authority to refinance participation certificates (PCs) which are backed in part by college housing loans. The PCs were issued in 1967 and 1968 by the Government National Mortgage Association (GNMA) and are scheduled to mature in 1987 and 1988.

Assuming that (i) the principal and interest payments of the loans backing the PCs that mature in 1987 and 1988 are insufficient to pay the full amount of principal and interest that is needed to retire the PCs in full and (ii) the PCs were issued pursuant to appropriation Act authority contained in 12 U.S.C. 1717(c)(4), GNMA has authority to issue additional PCs to refinance the insufficiency. The statute states in pertinent part at 12 U.S.C. 1717(c)(5):

> In the event that the insufficiency required by the trustee is on account of principal maturities of outstanding beneficial interests or participations authorized to be issued pursuant to paragraph (4) of this subsection, or pursuant hereto, the trustee is authorized to elect to issue additional beneficial interests or participations for refinancing purposes in lieu of requiring any trustor or trustors to make payments to the trustee from appropriated funds or other sources.

As the Department of Education does not have issuing authority, any refinancing of PCs must be done exclusively by GNMA. If the Department of Education continues its present course of funding for the time when the PCs mature, there will be no insufficiency and therefore no reason to rollover the maturing loans by refinancing them.

Please let us know if we can be of any further assistance.

Sincerely,

Robert W. Karpe

Robert W. Karpe

Senator ABDNOR. Is Mr. Mielke, Keith Mielke, vice president for research, here yet? I may be rushing him.

Roberta Miller? Is she here today?

Is Robert Rosenzweig here? Is he present here yet this morning.

Bruce Christensen?

STATEMENT OF BRUCE CHRISTENSEN, PRESIDENT AND PRESIDENT-DESIGNATE OF PBS, NATIONAL ASSOCIATION OF PUBLIC TELEVISION STATIONS

Mr. CHRISTENSEN. The planes are late from New York, so Mr. Mielke will arrive if he can. We are still trying to see whether he will be able to arrive.

Senator ABDNOR. I tell you, it is not exactly clear for landing planes if it is as bad as it was out where I am. I live close to National Airport.

Mr. CHRISTENSEN. Senator, it is a pleasure to be here. I bring you greetings from Marty Bush out in South Dakota. He said to be sure to say hello to you and to thank you for all the things you have done over the years for public broadcasting.

Senator ABDNOR. Thank you.

Mr. CHRISTENSEN. I have a complete statement for the record. I would like to supply that. I would just like to summarize quickly my remarks. It is a pleasure for me to be here.

My name is Bruce Christensen. I am president of the National Association of Public Television Stations, and we represent public television stations throughout the country.

NAPTS appears before this committee each year to emphasize the critical importance of support from the National Science Foundation for quality science education and information programming on public television.

Without the NSF, we would not now have NOVA, the weekly science series which Science magazine recently called, not so much Sunday communion as it is daily bread. This science documentary series, seen by as many as 20 million persons per broadcast, received initial NSF support in 1972 and was continually nurtured by NSF until stations could afford to carry the program's costs themselves.

Without the NSF, we would have not "3-2-1 Contact," the science series for our children from ages 8 through 12, a critical period in the development of children's attitudes toward science.

This year, we are highlighting programs of special importance to our children: The need for a full year 9 months of science programming for young people such as "3-2-1 Contact," the need for a companion math series for youngsters of the same age, and a proposal to involve local communities in science education entitled, "Project Prism," a media-assisted approach to upgrade science education.

This particular program, Senator, is being developed by WQED in Pittsburgh. They are the folks who did the chemical people special Outreach Program on drug and alcohol abuse, and they are well situated to put together a program to deal with this particular issue.

We are all too well aware of the need to upgrade science teaching nationwide. From our perspective in public television, this situation is as unfortunate as it is unecessary. The program production and distribution program capabilities of this Nation's educational television system offer a unique resource for the improvement of elementary and secondary science and mathematics education on a wide scale and in a cost-effective manner. Because our system reaches about 95 percent of the U.S. population, it is especially well suited to reaching vast numbers of people as well as targeting specific pockets of students.

Public television stations can develop and provide a comprehensive package of teacher training materials, a series of programs which can be used as in-service teacher training or as college credit courses.

Our public television satellite interconnected system is uniquely suited to address and note these needs, not only through our regular broadcast technology, but also through instructional fixed television services, a low-power broadcast technology which transmits a signal directly to a specific area. Many of our public television stations are already using this technology for exactly this purpose. However, at the present time, public television has just a few instructional television courses for our elementary students and almost none for our junior and senior high school students.

What is needed is an intensive effort to identify the inventory we now have, evaluate it, and then create the additional courses we need and distribute them.

Public television also needs more college level courses, not just for our teachers, but for others in the work force who need to upgrade their education and for the new class of college students that the PBS Adult Learning Service is already reaching. It is people in their mid to late thirties who have full time responsibilities at home or in the work force, or both, and who cannot afford the time to attend regular college campus courses.

Finally, as I mentioned previously, public television does not have enough science-oriented programming for young people and adults at home. We need more than "NOVA" in our national schedule; we need a series of programs like "New Tech Times," "Innovation," and "Tomorrow/Today."

We can no longer afford to have such services available to address just a few of the needs in a few of the places; we must serve these local needs nationwide.

With your help, we can provide far more science television programming than just "Nova" and "3-2-1 Contact," as well as college credit series, "The Brain," which would not be upcoming on our schedule without the critical assistance and guidance of the National Science Foundation.

We urge you to appropriate as much as you can for the work of the National Science Foundation and that NSF be encouraged as much as they can to using our nationwide system of public teleivion stations to help bring more science information and education to all Americans.

Thank you very much, Senator. I would just add that in Utah, where I come from, we have a critical need for the education programs in the junior high and high school level, and funding from NSF would be very helpful in that area for us, as well.

Senator ABDNOR. Thank you, Mr. Christensen. I certainly know the value of that because rural South Dakota doesn't exactly attract the greatest in educational background, material, facilities, and personnel. I think we have an excellent system out there. I was on the ground floor when we brought it in a number of years ago. It can pretty well blanket the State now.

You are stressing the need for a math series companion program to "3-2-1 Contact." Do you believe that we know enough about the presentation of materials via television to develop a successful math series and overcome the science anxiety phenomenon?

Mr. CHRISTENSEN. It seems to us that we can. The success of the children's Television Workshop has had in developing 3-2-1 and their testing of various reactions to that from the students, following up in the schools with the program that actually tries to determine and measure that interest would lead us to believe that the companion math series could be done, as well. I think it certainly goes without saying that it is a critical need now to have kids comfortable with numbers, understanding their manipulation and able to use those.

I think with the skill that we have in public television, particularly at the children's Television Workshop, this objective could be met and accomplished.

Senator ABDNOR. Good. Thank you.

Mr. CHRISTENSEN. Thank you very much, Senator.

Senator ABDNOR. I am sorry to rush you when you have come all the way from Utah, but I guess we have to move along to get all the testimony that we have here today.

Mr. CHRISTENSEN. Fine. Thank you very much. I certainly enjoyed the opportunity.

Senator ABDNOR. Thank you.

[The statement follows:]

STATEMENT OF BRUCE L. CHRISTENSEN, PRESIDENT, NATIONAL ASSOCIATION OF PUBLIC TELEVISION STATIONS

Mr. Chairman, I am extremely pleased to have this opportunity to present testimony in support of funding for the National Science Foundation. My name is Bruce Christensen, and I am President of the National Association of Public Television Stations. We represent public television stations throughout the country.

NAPTS appears before this Subcommittee each year to emphasize the critical importance of support from the National Science Foundation for quality science education and information programming on public television.

Without the NSF, we would not have NOVA, the weekly science series which Science magazine recently called "not so much Sunday communion as it is daily bread." This science documentary series, seen by as many as 20 million Americans per broadcast, received initial NSF support in 1972 and was continually nurtured by NSF until stations could afford to carry the program's cost themselves.

Without the NSF, we would not have 3-2-1 CONTACT, the science series for our children from ages 8 through 12, a critical period in the development of children's attitudes toward science. The first 65 program series, funded substantially by NSF, is being repeated for the seventh time on public television this spring. Thanks again substantially to NSF, a new series of 40 programs was inaugurated last fall and we will have another new series of 20 programs next fall. During its first year on public television, over 23 million youngsters watched 3-2-1 CONTACT at home and additional millions viewed it in school. Over 250,000 elementary school teachers requested the companion teacher guide. Science museums and schools established weekend activities to support and extend the enthusiasm created by the program.

Last year, in testimony before this Subcommittee, the National Association of Public Television Stations proposed to extend public television's science agenda through an expanded schedule of instructional television programs for elementary and secondary school students and in-service teacher training for science and math teachers at the high school level. We continue to believe this proposal deserves financial support from the NSF.

This year we are highlighting programs of special importance to our children: the need for a full year (9 months) of daily science programming for young people such as 3-2-1 CONTACT, the need for a companion math series for youngsters of the same age and a proposal to involve local communities in science education entitled PROJECT PRISM, A MEDIA ASSISTED APPROACH TO UPGRADE SCIENCE EDUCATION.

Mr. Chairman, as you and every other Member of your Subcommittee are well aware, this nation is in a critical state--one requiring a growing pool of skilled educators, as well as students, becoming interested in and excelling in science and mathematics. But just the reverse is occurring. Unfortunately, science and math teachers increasingly are leaving the field for more lucrative positions with industry. There has been a dramatic decline in the number of new science and math teachers trained annually by our colleges and universities. Both student enrollment in high school science and math courses and student achievement levels in these fields are declining. Only half of our high schools are able to offer science and math courses beyond the tenth grade. And, according to the 1983 report of the National Science Teachers Association, only half of the newly hired science and math teachers are qualified to teach these subjects.

Many of us in public television understand this problem. But we want to do more than that. We want to become part of the solution. And we want to start that process in the same way we addressed the problem of teenage alcohol and drug abuse. During the November broadcast of CHEMICAL PEOPLE, 11,000 community meetings were held nationwide. Many of our stations aired local follow-up programs and many are continuing to work with these community groups.

We believe that this kind of community outreach effort is the logical first step in addressing this nation's need to upgrade science education. It is the first of five responses WQED in Pittsburgh, producer of CHEMICAL PEOPLE, has developed to five national science education needs. I would like to take a few minutes to describe the first two parts of that proposal and how it relates to the unique nature of our public television system. A complete description is attached to my testimony.

As a first step, WQED proposes to develop nationwide telecasts on the model of CHEMICAL PEOPLE, to build a national consensus through massive community outreach.

The greatest enemy of science education is "science anxiety," a deep-seated fear of failure because science just seems "too hard." This is a problem which begins when our children are very young and becomes progressively worse as they grow older. Only 6% of our nine-year-olds list science as their favorite subject. At that age over one-quarter have already decided that a scientific career involves too much work with too little satisfaction.

The Children's Television Workshop (CTW) identified this problem nearly a decade ago. They developed 3-2-1 CONTACT, to show that science could be exciting and entertaining, with a format stressing human involvement, showing strong and competent role models and emphasizing the kids' interest in animals, the human body and the human implications of science and technology. That program has been a great success with our youngsters, both at home and in school. CTW is now working on a companion math series. Both these programs are desperately needed, on a daily basis, throughout the school year, and we in public television thank the NSF for all the support it has given. We hope that support will grow in proportion with our nation's needs.

Part of WQED's approach stems from research by CTW which indicates that our children learn more from these series when reinforced by viewing with their teachers and/or their parents. The second part of WQED's proposal is a "science anxiety autopsy," for our children and young people, their parents, their teachers and our school administrators so that we can address this problem and solve it together.

We are all too well aware of our need to upgrade science teaching nationwide. From our perspective in public television, this situation is as unfortunate as it is unnecessary. The program production and distribution capabilities of this nation's educational television system offer a unique resource for the improvement of elementary and secondary science and mathematics education on a wide scale and in a cost-effective manner. Because our system reaches about 95% of the U.S. population, it is especially well-suited to reaching vast numbers of people as well as targeting specific pockets of students. Public television stations can develop and provide a comprehensive package of teacher training materials--a series of programs which can be used as in-service teacher training or as college credit courses. Since so much of the recent research in quality education emphasizes the critical importance of principals in both the attitude and achievement levels of students, courses for school administrators and principals can help lead our students, and our guidance counsellors can reinforce this message.

Our public television satellite interconnected system is uniquely suited to address and meet these needs, not only through our regular broadcast technology but also through Instructional Television Fixed Service (ITFS), a lower power broadcast technology which transmits a signal directly to specific sites. Many of our public television stations are already using this technology for exactly this purpose. However, at the present time, public television has just a few instructional television courses for our elementary students and almost none at all for our junior and senior high school students. What is needed is an intensive effort to inventory what we have, evaluate it and then create the additional courses we need and distribute them.

Public television also needs more college level courses, not just for our teachers but for others in the work force who need to upgrade their education and for the new class of college students that the PBS Adult Learning Service is reaching--people in their mid-to-late 30's, who have full-time responsibilities at home, in the work force, or both, and who just cannot afford the time to attend regular college campus courses.

In Arizona and South Carolina, public television stations are providing graduate level, high tech, engineering and business administration. In Arizona, these courses are being used by IBM, Burr Brown, Hughes, Motorola and other electronics firms as well as the Army's electronics facility at Fort Huachuca and Sierra Vista. In South Carolina, 65% of the graduate degrees in business administration and engineering that are conferred by the University of South Carolina each year go to these telecast students. This service helps our workers and servicemen improve their skills and fosters our nation's international industrial competitiveness as well. Nationwide, the Public Broadcasting Service's Adult Learning Service is providing college credit courses to students in over 750 colleges and universities. The courses we are able to provide are growing in fields such as history (VIETNAM: A TELEVISION HISTORY; AMERICA: THE SECOND CENTURY; and HERITAGE: CIVILIZATION AND THE JEWS), social sciences (CONGRESS: WE THE PEOPLE; THE CONSTITUTION: THAT DELICATE BALANCE; and BRAIN, MIND AND BEHAVIOR), and professional development and teacher education (TEACHER TRAINING: A PROCESS APPROACH; TEACHING STUDENTS WITH SPECIAL NEEDS; and PROGRAMMING FOR THE GIFTED: MODELS AND METHODS). Public television is beginning to develop a series of science and math programs such as THROUGH THE GENETIC MAZE; OCEANUS: THE MARINE ENVIRONMENT; and UNDERSTANDING SPACE AND TIME. We look forward to being able to provide new courses such as THE MECHANICAL UNIVERSE and TERRA NOVA in the near future. This progress toward scientifically oriented adult learning can and must continue.

Finally, as I mentioned previously, public television does not have enough science-oriented programming for young people and adults at home. We need more than NOVA in our national schedule. We need a series of programs like NEW TECH TIMES, INNOVATION and TOMORROW/TODAY.

We can no longer afford to have such services available to address just a few needs in a few places. We must serve these local needs nationwide.

With your help, we can provide far more science television programming such as NOVA and 3-2-1 CONTACT as well as college credit series THE BRAIN--which would not be coming to the airwaves next year without the critical assistance and guidance of the National Science Foundation.

We urge you to appropriate as much as you can for the work of the National Science Foundation, and that NSF be encouraged to direct as much as they can to using our nationwide system of public television stations to help bring more science information and education to all Americans.

Thank you.

PROJECT PRISM—A MEDIA ASSISTED APPROACH TO UPGRADE SCIENCE EDUCATION

PRESENTED BY METROPOLITAN PITTSBURGH PUBLIC BROADCASTING, INC.

PRELIMINARY RESPONSES TO PROJECT PRISM

"Innovation and networking are the keys to a successful project of this scope. I support fully the objectives of WQED's PROJECT PRISM."

—Dr. Bill Aldridge, Executive Director
National Science Teachers Association

"The program approach meets a current problem and does so with innovation. I fully support the thrust of the proposal."

—Dr. Kenneth Mechling, President
Pennsylvania Science Teachers Association

"This project corresponds closely with PHEAA's ongoing involvement in science education reform. PHEAA welcomes a close working relationship with WQED on the important and timely actions proposed in PROJECT PRISM."

—Dr. Thomas Fabian, Exec. Deputy Director
Pennsylvania Higher Education Assistance
Agency

"WQED will provide a great service to science education by its proposed work to gain community support for science and science teaching."

—Dr. Audrey Champagne, Director
Science Programs
Learning, Research & Development Center
University of Pittsburgh

"PROJECT PRISM is an innovative approach to the problems in science education today. WQED's technical expertise enables it to network the community's diverse resources with the potential of making a great contribution to science education and its continued support."

—Jane Konrad, Director
Pittsburgh Regional Center for
Science Teachers

"We fully agree with your assessment of the needs, we heartily endorse the proposed actions and we look forward to significant participation in this project."

—Dr. Al Desena, Director of Programs
The Buhl Science Center

"We look forward to being a part of this effort as well as a recipient of the results promised by its goals."

— Donald Mears
Board of Education
Pittsburgh Public Schools

"The future of the American way of life depends crucially on developing citizens with high scientific literacy as well as encouraging more young students to pursue technological careers. I strongly endorse this PROJECT PRISM Proposal."

—Dr.Albert Caretto,
Program Director
Carnegie Mellon University

Also, the Office of Education in the State of Pennsylvania, under the leadership of Dr. Robert Wilburn, has pledged full support for this effort which his staff terms "visionary".

In addition to the endorsements listed above, the National Academy of Science is considering our request to name scientists and experts to ensure the project's quality.

Given the enthusiastic support we have received thus far, we feel that PROJECT PRISM is an answer eagerly awaited.

"Today's educators, school boards, and citizens need to develop a mindset that turns educational adversity into an educational renaissance."

—H. Dean Evans
Lilly Endowment

All over America — in large city classrooms, small dedicated village schools, museums, science centers, and through individual state supported efforts, innovative activity in diverse pockets has already begun to point the way toward excellence in science education. Perhaps the seeds from those many isolated flowers can be collected and used to provide the Genesis of a National garden. After viewing the many national reports, no one can deny that there is a long national march ahead. We seek to fashion a dramatic, effective vehicle equal to this significant challenge. We have christened it PROJECT PRISM.

The planning for PROJECT PRISM began in Western Pennsylvania and the Commonwealth of Pennsylvania, but is conceived as a national strategy to aid local and state efforts everywhere.

Our approach was greatly influenced by the success of WQED's local, state and national drug education effort, THE CHEMICAL PEOPLE. That landmark project featured First Lady Nancy Reagan, Michael Landon, Bill Bixby, Rita Moreno, Sandy Duncan, Willie Stargell and Bruce Weitz and resulted in the establishment of nearly 11,000 town meetings all over America. Most have become ongoing task forces dedicated to combat school-age drug and alcohol abuse. A national public awareness campaign, coupled with extensive use of print, the active participation of parents, and the networking of 35 national organizations, captured the imagination of most Americans. PROJECT PRISM carefully utilizes the experience from that project, but has also evolved from many discussions with leading science educators. It was initiated after an extensive analysis of the many national reports on education. WQED is no stranger to science. It produces the NATIONAL GEOGRAPHIC SPECIALS and currently, PLANET EARTH, a massive earth science telecourse produced in partnership with the National Academy of Science for the Annenberg Project. WQED, the first community owned station was also responsible for the first classroom use of television in America.

Documenting The Needs

The reports and studies are in; so are the initial critiques of these findings. The needs in science education are perhaps the most urgent part of the national concern about all of American education. We have selected five of the many cited needs.

We began with three criteria. Each was: (A) of high priority in most of the national studies; and (B) educators K-12 also gave these needs a high priority; and (C) each can be greatly supported by technology.

> "We must begin a broad national effort to address our growing technical human resource weaknesses...much of the work that needs to be done will have to take place at the grass root...parents who develop an increased awareness of the value of science and math courses for their children...local school boards imposing tougher math/science requirements for graduation... school administrators hiring greater numbers of highly qualified science and math teachers...scientists and technical professionals in their own communities stressing the importance of this facet of training for our students."
>
> — Don Fuqua, U.S. Representative,
> Florida

AN OVERVIEW OF FIVE NEEDS
AND
PROJECT PRISM: A WORKABLE RESPONSE

NEED ONE: THERE IS A NEED FOR WIDE-SPREAD PUBLIC UNDERSTANDING AND SUPPORT FOR SCIENCE EDUCATION AND THE NECESSARY REFORM EFFORTS

RESPONSE: A Massive Science Awareness Campaign - This will be composed of two primetime, network telecasts based on extensive research, as well as motivating informative exhibits, and providing promotional materials for each community through science centers and the schools. The goal is nothing short of building a national constituency for elementary and secondary science education.

NEED TWO: THERE IS A NEED TO COMBAT THE GREATEST ENEMY OF SCIENCE EDUCATION - "SCIENCE ANXIETY

RESPONSE: The Great Science Anxiety Autopsy - With a light touch, a package of research-based print and non-print materials will be developed for students, parents, teachers, administrators and the media. The goal is to raise the public's awareness of this common, and crippling phenomenon. Science Anxiety's effect on the individual and the nation will be discussed as a step-by-step plan is provided to help eliminate the fear.

NEED THREE: THERE IS A NEED TO INVOLVE THE ACTIVE TEACHING ASSISTANCE OF THE ENTIRE COMMUNITY

RESPONSE: Science Without Walls - We will develop a plan of action for meaningful community involvement. Practical manuals as well as video modules and a plan for science center exhibits and displays will aid elementary and secondary schools in involving parents, business and industry, and the entire community in these science education efforts. Teleconferencing will be utilized to put various groups, such as parents, business and industry, retired professionals, researchers, teachers, students and curriculum designers, in communication with one another. Such innovative approaches can produce substantial gains.

NEED FOUR: THERE IS A UNIVERSAL NEED TO STRENGTHEN TEACHERS AND TEACHING

RESPONSE: Building Teacher Power - Print materials and video modules will be offered as in-service programs covering a variety of topics. Teachers K-12 will be bolstered in their areas of weakness. PROJECT PRISM will provide the best national consultants available to present new research findings and techniques relevant to the classroom, and address key areas of special help for teachers. A series of modules will be presented for principals as well, since strong administration is key. A national approach can provide the very best in-service training in the nation; and can do so in the most cost-effective manner.

NEED FIVE: TO FIND, OR CREATE, AND THEN EVALUATE AND DISTRIBUTE EFFECTIVE NEW SCIENCE EDUCATION MATERIALS AND INFORMATION TO SCHOOLS AND SCIENCE CENTERS ON AN ONGOING BASIS

RESPONSE: A Science Satellite Network - A regular satellite distribution system will provide science education modules for schools as well as community and school science centers, featuring computer assisted instruction, print materials, science news, television program information, games, displays, surveys and workshop guides. WQED via PBS will feed the modules to its satellite; the satellite will feed to PTV stations; PTV stations will air during daytime instructional periods. Schools, intermediate units and community science centers will tape off-air for use at their convenience.

The Science Satellite Network will also consolidate and continue the gains of the first four components. As additional concerns and opportunities are detected, or as needs change, new materials will be produced.

"Happily, PROJECT PRISM can make the difference this time because it will be uniquely supportive and effective at exactly the circuit breaker points of science education where success will be determined: 1) in the public's support or apathy; 2) in student readiness or reluctance to achieve; 3) in parent and community teaching assistance or resistance; 4) in innovative teacher training or the status quo; and 5) in regular access to new ideas and new tools to do the job, or in using the same traditional educational tools."

— Lloyd Kaiser
President, WQED

STATEMENT OF ROBERTA MILLER, EXECUTIVE DIRECTOR, INSTITUTE FOR SOCIAL RESEARCH, ON BEHALF OF CONSORTIUM OF SOCIAL SCIENCE ASSOCIATIONS

Senator ABDNOR. Our next witness is Roberta Miller.

Is Roberta Miller here now?

We appreciate your presence here today, Ms. Miller.

Ms. MILLER. Thank you very much. I appreciate the opportunity to testify. Actually, I was not scheduled to testify this morning. I received a phone call half an hour ago from Detroit, where Dr. Thomas Juster, who was to have presented testimony this morning, was grounded. The planes could not land in Washington. This morning, I will be presenting his testimony.

It is on behalf of the Consortium of Social Science Organizations, the organization of which I am the executive director. It represents about 175,000 social scientists. I am here to testify on the budget appropriation for the National Science Foundation. The budget request for fiscal 1985 contains a welcome and important increase for the National Science Foundation, amounting to nearly 14 percent over all. However, this overall request marks considerable differences in appropriations for particular research areas supported by the Foundation.

At the present time, the social and behavioral science programs, taken together, are scheduled to receive an increase of only 10 percent in fiscal year 1985. Yet, despite this proposed increase, these programs will receive proportionately less of the Foundation's funds in 1985 than they are receiving in 1984. The present budget request provides funding for these programs amounting to 3.6 percent of the total budget of NSF's research and related activities. This is a decline from 3.8 percent of the research and related activities in 1984, and a considerable decline from the 5.9 percent that the social and behavioral sciences research received from the total NSF research funds in fiscal 1980.

In the past, this subcommittee has acted to restore funding for social and behavioral science research programs. The actions of this subcommittee have, in fact, been instrumental in reducing some of the worse inequities in the earliest NSF budget cuts. But a problem remains. It has now been nearly 4 years since the heavy budget cuts of 1981, and the 10 percent budget cuts for 1985 would still leave these programs with 10 percent less than what they received in 1980 current dollars and with considerably less than that in constant dollars. A table attached to Dr. Juster's testimony compares the social and behavioral programs with other NSF programs.

If you look at it, you will see that during this same 5-year period, the Engineering Directorate received a total increase of 92 percent over their fiscal 1980 level. The math and physical sciences level increased by 84 percent over their 1984 level. The social and behavioral science programs, with steady increases since 1982, are still 10 percent below the fiscal 1980 level.

I am not arguing that the social and behavioral science program should received budget increases over the requested levels because they once had higher budgets than they currently now have. Rather, I am arguing that these programs support high-quality research in scientifically important areas and that they cannot be maintained at current funding levels.

What are some of the benefits of investments in social and behavioral science research? A recent report of a committee of the National Academy of Sciences characterized the benefits of these sciences in three ways: In terms of information generating technologies, such as sample surveys, standardized testing, and economic indicators and economic models; changes in the way that we do things, as in human factors applications, learning theory, resource allocation, and locational analysis and program evaluation, which is very important to the working of the Federal Government; and a third way that social behavioral science research benefits us is through changes in the ways that we think about things.

An example of the latter concerns economic expansion and inflation rates. At the present time, everyone knows that expansions generate pressures on wage rates and prices and that higher inflation rates typically accompany the late stages of an expansion. That general situation was not obvious 50 years ago, and it is due to a great deal of careful theoretical and emperical work of economics, much of it supported by the National Science Foundation.

There is still a great deal of work to be done. The National Academy of Sciences has just begun a project to set priorities for research in the social and behavioral sciences. The project will encompass all areas of research in these sciences. Until the report is completed, however, you can get a sense of important and emerging areas of research in these fields from several other reports and documents.

The 5-year outlook for science and technology in 1981 published a set of papers on research and science and behavioral sciences that centered on the relationship between physical and human health and behavior, large-scale survey methods, the life course perspective in social analysis, the measurement of social change, and social and emotional development in children.

In a 1982 report of the academy committee on basic research and in the behavioral and social sciences stressed the importance of research on the history of the family, information science, social choice theory, voting behavior, and others.

The 1982 report by the Institute of Medicine stressed the need to expand our knowledge of behavioral influences on illnesses and health.

These are just a few of the recent reports by national scientific groups on important areas of research in the social and behavioral sciences. Dr. Juster wrote in his testimony, "I would add my own list of areas of great potential," which include the analysis of productivity change at the level of the individual, the analysis of saving behavior, the diffusion of technology and the relation between technology, organizational structure, and the ways that individuals' expectations influence their economic behavior.

I would also like to call the committee's attention to a research program initiated last year in teaching and learning research in mathematics and science. In last year's budget, this committee recommended that up to $5 million be devoted to this program and that the funding be transferred for this purpose from the Science Education Directorate to the Biological Behavioral and Social Sciences Directorate. That seems to have been a wise and far-sighted decision, and I would urge the committee to continue its support of this important area of scientific inquiry. While research on educational institutions methods focused on improving our present educational system is an important part of any portfolio research activity within NSF, research on the basic determinants on learning is equally important, especially in terms of its long-run potential payoff.

I realize that this committee has traditionally taken the view that it should not intrude into the details of program development within the National Science Foundation research budget, although it has occasionally done so. While I tend to agree with the presumption that an Appropriations Committee should be concerned with overall priorities for various types of activities, I believe the circumstances with regard to the National Science Foundation budget are unique.

Decisions about allocations within agency budget totals are usually made by authorizing committees, but in the Senate, there has been a jurisdictional dispute which has prevented NSF authorizing bills from coming to a vote for a period of several years. For these same years, both House and Senate authorizing committees have recommended that the National Science Foundation budget for social and behavioral science research programs be increased, but there has been no legislation authorizing this. In the absence of legislative guidance from the Senate authorizing committees, I would urge this committee to intervene to some extent in the allocation process, perhaps taking a cue from actions already approved in the Congress this year. The Senate Labor and Human Resources Committee has approved an addition of $3 million to the budget of the biological behavior on social sciences for research in the social and behavioral and information sciences, and the House of Representatives has approved an authorization for NSF that includes an increase of $5 million for these programs.

I strongly urge this committee to increase the budget for the social and behavioral science programs and to follow the lead of the authorizing committees.

Thank you.

Senator ABDNOR. Thank you, Ms. Miller. I'm sure Dr. Juster would be very pleased with your performance today, and you are a better salesman even than he is. We are well aware of the problems you do have with these authorizing committees. Sometimes we wish we could wave a magic wand and make them shape up. Hopefully, we can work something out. I am pleased to hear of Dr. Juster's support for the subcommittee's initiative during fiscal year 1984 of providing up to $5 million for science education research. I understand that the Foundation received well over $20 million in proposals of which $5 million will be funded.

Given the quality and the quantity of the proposals, it is likely that we will continue to provide the targeted funding in fiscal year 1985. We appreciate your comments concerning the need to redirect resources within the Foundation to the area of information sciences, and again, we are sorry that Dr. Juster got socked in with this weather. I'm sure he made a safe decision and the good one by letting you testify in his place. Thank you very much.

Ms. MILLER. Thank you.

[The statement follows:]

STATEMENT OF F. THOMAS JUSTER, PH.D., DIRECTOR, INSTITUTE FOR SOCIAL RESEARCH, UNIVERSITY OF MICHIGAN, ON BEHALF OF THE CONSORTIUM OF SOCIAL SCIENCE ASSOCIATIONS

Mr. Chairman and Members of the Committee:

My name is F. Thomas Juster, and I am Director of the Institute for Social Research and Professor of Economics at the University of Michigan. I am testifying on the National Science Foundation appropriation, with particular regard to the appropriation for the Social and Behavioral Science Program at the NSF. I am testifying on my own behalf as well as for the Consortium of Social Science Associations (COSSA), an organization that represents over 175,000 social and behavioral scientists in the United States. A list of COSSA Members, Affiliates, and Contributors is attached to my testimony.

The budget request for FY 1985 contains a welcome and substantial increase in the budget of the National Science Foundation, amounting to nearly 14% overall. However, this overall request masks considerable differences in appropriations for particular research areas supported by the Foundation.

At the present time, the social and behavioral science programs, taken together, are scheduled to receive an increase of 10% in FY 1985. Yet despite this proposed increase, these programs will receive proportionately less of the Foundation's research funding than they received last year. The present budget request provides funding for social and behavioral science programs amounting to 3.6% of the total budget for Research and Related Activities. This is a decline from 3.8% in FY 1984 and a considerable decline from the 5.9% of research funds that the social and behavioral sciences received in FY 1980.

In the past, this Subcommittee has acted to restore funding for social and behavioral science research programs. The actions of this Subcommittee have, in fact, been instrumental in reducing some of the worst inequities in the early NSF budget cuts. But a problem remains. It has now been nearly four years since the heavy budget cuts of 1981, and the 10% increase scheduled for these programs in FY 1985 will still leave them with 10% less than they received in current dollars in FY 1980 and considerably less than that in constant dollars. A table showing funding levels from FY 1980 to FY 1985 for the NSF social and behavioral science programs is attached to my testimony.

I am not arguing that the social and behavioral science programs should receive budget increases over the requested levels because they once had higher budgets than they currently have. Rather, I am arguing that these programs support high quality research in scientifically important areas and that they cannot be maintained at current funding levels.

What are some of the benefits of investments in social and behavioral science research? A recent report of a committee of the National Academy of Sciences characterizes the benefits of social and behavioral science research in three ways: information-generating technologies (such as sample surveys, standardized testing, and economic indicators and economic models); changes in the ways that we do things (as in human factors applications, learning theory, resource allocation and locational analysis, and program evaluation); and changes in the ways that we think about things. An example of the latter concerns economic expansion and inflation rates. At the present time, everyone knows that expansions generate pressure on wage rates and prices, and that higher inflation rates typically accompany the late stages of an expansion. But that generalization was not obvious 50 years ago, and is due to a great deal of careful empirical and theoretical work.

In a similar vein, it was "widely known" decades ago that aging inevitably brings on a loss of intellectual and physical functioning, that the only way to achieve good health is to improve medical knowledge related to the treatment of pathologies, that productivity change is largely explained by capital investment per worker, that the differences in economic and social outcomes between racial and ethnic groups was largely a result of genetic differences, that differences in schooling quality were what determined educational outcomes, that older people were best off in family environments, and so on.

None of these generalizations are now widely held in the scientific community, largely because the cumulative development of empirical evidence and theory in the social and behavioral sciences has provided us with richer insights.

There is still a great deal of work to be done. The National Academy of Sciences has just begun a project to set priorities for research in the social and behavioral sciences. The project will encompass all areas of research in these sciences. Until that report is completed, however, we can get a sense of important emerging areas of research from several other reports and documents:

The Five-Year Outlook for Science and Technology in 1981 published a set of papers on research in the social and behavioral sciences that centered on the relationship between physical health and human behavior, large scale survey methods, the life course perspective in social analysis, the measurement of social change, and social and emotional development in children.

The 1982 report of the Academy Committee on Basic Research in the Behavioral and Social Sciences stressed the importance of research in the history of the family, information science, social choice theory, voting behavior, and others.

The 1982 report by the Institute of Medicine stressed the need to expand our knowledge of social and behavioral influences on illness and health.

These are just a few of the recent reports by national scientific groups on important areas of research in the social and behavioral sciences. I would add my own list of areas of great potential. They include the analysis of productivity change at the level of the individual, the analysis of saving behavior, the diffusion of technology and the relationship between technology and organizational structure, and the ways that expectations influence behavior.

I would like to emphasize that it is critical to maintain a balanced program of research in the NSF social and behavioral science programs. NSF is the major national source of support for basic research in these areas. In past years testimony presented to this Committee has strongly emphasized the importance of maintaining a solid core of scientific data bases within the NSF research portfolio, since without careful attention to the measurement of behavioral phenomena there can be little hope of cumulative progress in the social and behavioral sciences. But measurement by itself is an insufficient basis for scientific progress. Providing a high-powered telescope to astronomers is indispensable for producing a better understanding of celestial phenomena; but if no funds were provided for astronomers to man the telescope and observe what was happening, having the telescope would not produce much in the way of progress. Similarly, if no resources were ever put into development of new methods of data analysis with which the careful observation produced by astronomers working with precise instruments could be analyzed, the growth of understanding would be impeded.

Just as in the astronomical sciences, so it is in the social and behavioral sciences. One needs the combination of careful measurements, analysis of how these measurements can be used to produce better models and hence better behavioral insights, and the development of better methods to be applied in the analysis. Moreover, there are equally important areas of scientific inquiry in the social and behavioral sciences where data bases of the conventional sort are neither available nor appropriate. All these areas need support from the National Science Foundation research programs in the social and behavioral sciences. For many of these areas NSF is the sole source of support for research.

I would also like to call the Committee's attention to a research program initiated last year in teaching and learning in mathematics and science. In last year's budget, this Committee recommended that up to $5 million be devoted to that program, and that the funding be transferred for this purpose from the Science Education Directorate to the Biological, Behavioral and Social Sciences Directorate. That seems to me to have been a wise and far-sighted decision, and I would urge the Committee to continue its support of this important area of scientific inquiry. While research on educational institutions and methods, focused on ways of improving our present educational system, is an important part of any portfolio of research activity within the NSF, research on some of the basic determinants of learning is equally important, especially in terms of its long-run potential payoff.

I realize that this Committee has traditionally taken the view that it should not intrude into the details of program development within the National Science Foundation research budget, although it has occasionally done so. While I tend to agree with the presumption that appropriations committees should be concerned with overall priorities for various types of activities, I believe the circumstances with regard to the National Science Foundation budget are unique.

Decisions about allocations within agency budget totals are usually made by authorization committees. But in the Senate there has been a jurisdictional dispute which has prevented NSF authorizing bills from coming to a vote for a period of several years. In the absence of such guidance from the Senate

Authorizing Committees concerned with the NSF budget, I would urge this body to intervene to some extent in the allocation process, perhaps taking a cue from actions approved in the deliberations of the House Science and Technology Committee. That group recently approved a $5 million increase in the budget for the Biological, Behavioral and Social Sciences Directorate of the NSF, with $3.6 million of the increase earmarked for the social and behavioral science programs within the BBS and $1.4 million for information sciences. I strongly urge this Committee to act in a similar way; such action would help to redress what seems to be an imbalance in scientific priorities reflected in the Administration's budget request.

NATIONAL SCIENCE FOUNDATION

Funding for Selected Directorates and Programs (in million $)

	Actual FY80	Actual FY81	Actual FY82	Actual FY83	Actual FY84	Proposed FY85	%Change FY84-85	%Change FY80-85
Dir. for Mathematical and Physical Sciences (MPS)	227.0	256.5	272.9	299.7	359.5	416.7	+16	+84
Dir. for Astronomic/Atmospheric Earth & Ocean Sciences (AAΣO)	218.1	236.3	240.0	276.2	330.3	373.5	+13	+71
Dir. for Engineering (ENG)	76.6	83.8	93.3	101.1	120.7	147.1	+22	+92
Dir. for Scientific, Technological & International Affairs (STIA)	36.6	36.0	40.3	44.1	40.8	46.9	+15	+28
Dir. for Biological, Behavioral & Social Sciences (BBS)	185.7	185.6	176.0	190.2	224.8	253.1	+13	+36
Social & Behavioral Science Programs in BBS	52.4	43.7	32.3	36.0	42.8	47.2	+10	-10
Social & Behavioral Science as Proportion of Research & Related Activities	5.9%	4.6%	3.3%	3.7%	3.8%	3.6%		
Science & Engineering Education	77.2	64.7	20.9	16.1	88.9	75.7	-15	-2

Social and Behavioral Science Research Programs in BBS (in million $):

	Actual FY80	Actual FY81	Actual FY82	Actual FY83	Actual FY84	Proposed FY85	%Change FY84-85	%Change FY80-85
Division of Behavioral and Neural Sciences (selected programs)								
Neuroscience								
Psychobiology	4.5	4.3	3.4	3.7	4.2	4.4	+5	-2
Cognitive Science								
Memory & Cognitive Proc.	2.6	2.4	2.2	2.3	2.6	2.8	+8	+8
Social & Dev. Psychology	3.3	2.6	1.5	2.1	2.6	2.7	+4	-18
(Applied Psychology - absorbed elsewhere)	1.4	1.1	--	--	--	--		
Linguistics	2.7	2.2	2.1	2.2	2.4	2.5	+4	-7
Anthropology	6.6	6.0	5.5	5.8	6.4	6.8	+6	+3
Subtotal	21.1	18.6	14.7	16.1	18.2	19.2	+5	-9
Division of Social & Economic Science								
Economics & Geography								
Economics	12.2	9.4	6.3	7.1	9.4	10.25	+9	-16
Geography	1.6	1.2	0.7	0.8	1.0	1.3	+30	-19
Social Measurement & Analysis								
Sociology	3.9	3.0	2.2	2.4	2.95	3.65	+24	-6
Meas. Meth./Data Resources	5.0	3.9	2.9	3.3	3.6	3.4	-6	-32
History/Philosophy of Science	1.5	1.1	0.9	1.1	1.35	1.6	+19	+7
Political & Policy Sciences								
Political Science	3.6	2.9	2.1	2.3	2.8	3.6	+29	--
Law & Social Sciences	0.9	0.9	1.1*	1.2	1.4	1.7	+21	+89
Regulation & Policy Analysis	2.6	2.7	0.9	0.9	1.1	1.3	+18	-50
Decision & Management Sci.			0.5	0.8	1.0	1.2	+20	N/A
Subtotal	31.3	25.1	17.6	19.9	24.6	28.0	+14	-11
TOTAL-Social & Behavioral Science Research Programs	52.4	43.7	32.3	36.0	42.8	47.2	+10	-10

*In FY 1981, this program was combined with the Law and Policy Program of the Division of Applied Research.

CONSORTIUM OF SOCIAL SCIENCE ASSOCIATIONS

Members

American Anthropological Association
American Economic Association
American Historical Association
American Political Science Association
American Psychological Association
American Sociological Association
American Statistical Association
Association of American Geographers
Association of American Law Schools
Linguistic Society of America

Affiliates

American Association for Public Opinion Research
American Educational Research Association
American Society of Criminology
Association for Asian Studies
Eastern Sociological Society
Economic History Association
Evaluation Network
Evaluation Research Society
History of Science Society
International Communication Association
International Studies Association
Law and Society Association
National Council on Family Relations
North Central Sociological Association
Northeastern Anthropological Association
Population Association of America
Regional Science Association
Rural Sociological Society
Social Science History Association
Society for American Archaeology
Society for the History of Technology
Society for Research in Child Development
Society for the Scientific Study of Religion
Society for Social Studies of Science
Southwestern Social Science Association

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The Johns Hopkins University
University of Michigan
University of Missouri
University of Nebraska
New York University
Ohio State University
University of Oregon
University of Pennsylvania
University of Pittsburgh
Princeton University
Social Science Research Council
University of Southern California
Stanford University
State University of New York at Stony Brook
Texas A & M University
Tulane University
University of Washington
University of Wisconsin, Milwaukee

STATEMENT OF ROBERT ROSENZWEIG, PRESIDENT, ASSOCIATION OF AMERICAN UNIVERSITIES, ON BEHALF OF NATIONAL ASSOCIATION OF STATE UNIVERSITIES AND LAND-GRANT COLLEGES, AMERICAN COUNCIL ON EDUCATION, AND COUNCIL OF GRADUATE SCHOOLS

Senator ABDNOR. Is Dr. Rosenzweig here now?

Yes, Doctor, we are happy to have you, I realize you have been up against a lot of competition here with the weather.

Mr. ROSENZWEIG. Thank you, Mr. Chairman. I almost got socked in on Metro this morning.

Senator ABDNOR. That is quite possible. You go right ahead.

Mr. ROSENZWEIG. Thank you, sir. I appreciate the opportunity to appear here before you this morning to comment on the programs of the National Science Foundation and on related matters of science policy.

I am here on behalf of the Association of American Universities as well as the National Association of State Universities and Land-Grant Colleges, the American Council on Education, and the Council on Graduate Schools.

In the brief time I have for oral remarks, Mr. Chairman, I want to focus on three specific items. Each of them is covered in more detail in the statement I have submitted for the record.

Senator ABDNOR. I assure you that, as I told all the others earlier, all your comments and statements will be made a part of the record.

Mr. ROSENZWEIG. Thank you. The three I want to comment on specifically are, first, the overall funding levels for the National Science Foundation; second, the institutional base of research; and third, the standards to be used in awarding research dollars.

Let me turn first to the research funding. Briefly under this heading, I hope my brevity won't be misunderstood for a lack of enthusiasm.

Senator ABDNOR. Stop for a second here.

[Pause.]

Senator ABDNOR. Go right ahead.

Mr. ROSENZWEIG. Thank you. The proposed budget is very heartening to us. It bespeaks the recognition of the importance of basic research to the Nation, and as I will explain shortly, it also reflects an awareness that research takes place in institutions that must be strong if the work done in them is to be of high quality.

Given the size and complexity of an NSF budget these days, it is no trick at all to suggest how it might be improved in this or that way. Indeed, in my written statement, I have made a few such suggestions. If those few changes were made, it would be a better budget in all cases, but in all candor, if they were not made, it would still be a very good budget.

Indeed, having said that, let me turn to the institutional base of science. It seems to me, Mr. Chairman, that we may be learning something in this country. What we may be learning may be making a difference. I think we have learned from the experience of our older heavy industries, especially the steel and automobile industries, that it is possible to go for a long time without investing in the modernization of plant and equipment. What happens is that you continue producing, but your products slowly becomes less good, more expensive, and less competitive. If you continue that way long enough, you can still be producing something but be effectively out of business.

Exactly the same is true of research. We pretty much stopped investing in the plant and equipment required for modern research in the late 1960's. At the same time, we cut back substantially on programs designed to attract the best young college graduates into research and teaching. Earlier investments sustained the quality of the research product for a decade, but we are approaching—indeed I will suggest we have reached—the point at which that is no longer possible.

Scientific equipment in universities is too often obsolete. Research facilities are in need of renovation or replacement, and faculty are growing old together, more or less gracefully.

It is tremendously encouraging to us to find in this budget and in several other agency budgets, tangible recognition of the need to repair the research instrumentation base of science in universities. More needs to be done, but NSF's previous efforts on equipment and this year's continuation of them are welcome signs that the problem has been seen and that there is a determination to do something about it.

My statement for the record describes a study project on research instrumentation that three of our associations are carrying out for the Science Foundation and for several other agencies.

Finally, let me turn to the question of the standards for the allocation of funds for science. From time to time, it seems worthwhile to recognize our accomplishments even as we also recognize how far short of our aspirations they may fall. In that spirit, I want to say that one of the truly heroic and sustained acts of self restraint that we have seen in the last several generations has been that practiced by the Congress in resisting temptations to substitute political considerations for scientific judgments. No human institution is perfect, not even, Mr. Chairman, probably the Congress of the United States, but the record in this area over a long period is really a good one.

When dealing with decisions about who is best qualified to do the work that needs to be done, politics and science do not mix well.

The Russians have on occasion, practiced a form of science based upon politics, their's deriving from ideology. It has produced a series of disasters that have crippled their national effort. In the last year or so, there have been signs that a different form of sicence based on politics has been creeping into our system, this one based on constituency advantage.

If unchecked, it will produce disasters for our national scientific effort.

The reason is easy to understand: There is no point in doing less than the best science of which we are capable, and we can only do that if the decisions about what to do and who should do it are based on the best scientific judgment that we can muster.

To settle for less is to waste the taxpayers' money and to risk the damage that the modern world holds in store for scientifically and technologically backward nations. If that seems to apocalyptic a judgment, then you may discount my concern by some fair amount, and I submit that my main point still stands.

In recognition of the dangers nationally along the road that leads away from the judgment of science by scientists, a number of national organizations, including all those I represent here today, have issued statements affirming their commitment to the established processes of peer review.

They are attached to my prepared statement. I commend them to the committee's attention. I hope that the sense of urgency that led to their adoption comes through clearly enough to those who read them.

Thank you, Mr. Chairman. I will be pleased to answer your questions.

Senator ABDNOR. Thank you, Dr. Rosenzweig.

I heard many things, including we are not perfect here in Congress, above all. Let me say the chairman would love to have been here today. He won't be able to come until this afternoon, but he has always opposed funding being earmarked and has supported the peer review process. So I know you have his support on that. You voice some concerns about the potential impact of the Presidential Young Investigator Awards Program in your statement here——

Mr. ROSENZWEIG. Yes.

Senator ABDNOR [continuing]. On NSF's policy for establishing investigators. Do you have any specific cause for concern at this time?

Mr. ROSENZWEIG. No, just a worry. There is nothing in the present budget that makes that concern real for the coming year. It is just that we want to call it to the committee's attention in the event that it should have that effect in the future.

Senator ABDNOR. Fine. That was a concern. If there was a specific cause, we want to know about it.

Mr. ROSENZWEIG. Thank you.

Senator ABDNOR. Doctor, we appreciate your coming in today. Your entire statement and the accompanying one, I assume of the Association of American Universities, will be placed in the record.

Mr. ROSENZWEIG. Thank you. Senator, let me say that I do appreciate that in giving this message to this committee. I am preaching to the choir, but in my position, you take every opportunity to preach that you can.

Senator ABDNOR. You bet.

Mr. ROSENZWEIG. I appreciate the audience.

Senator ABDNOR. Thank you very much.

[The statement follows:]

STATEMENT OF ROBERT ROSENZWEIG, PRESIDENT, ASSOCIATION OF AMERICAN UNIVERSITIES

MR. CHAIRMAN AND MEMBERS OF THE COMMITTEE,

MY NAME IS ROBERT ROSENZWEIG AND I AM PRESIDENT OF THE ASSOCIATION OF AMERICAN UNIVERSITIES. THE RESEARCH UNIVERSITIES THAT COMPRISE THE MEMBERSHIP OF THE ASSOCIATION ARE 50 OF THE LEADING PUBLIC AND PRIVATE INSTITUTIONS RANKED BY NSF AMONG THE TOP 100 RESEARCH UNIVERSITIES IN TERMS OF FEDERAL RESEARCH AND DEVELOPMENT OBLIGATIONS RECEIVED BY OUR UNIVERSITIES AND COLLEGES. THEREFORE THEY ARE AMONG THE UNIVERSITIES MOST CLOSELY INVOLVED WITH THE BASIC SCIENCE AND RELATED GRADUATE EDUCATION PROGRAMS OF THE NATIONAL SCIENCE FOUNDATION.

YOU HAVE ASKED ME TO PRESENT OUR VIEWS ON THE FY 1985 APPROPRIATION REQUEST OF THE NSF. I AM PLEASED TO HAVE THIS OPPORTUNITY NOT ONLY TO ADDRESS THE NSF BUDGET REQUEST FOR NEXT YEAR BUT ALSO TO REPORT TO YOU SOME OF OUR CURRENT ACTIVITIES ON ISSUES CLOSELY RELATED TO THE FOUNDATION'S BUDGET PROPOSALS. MY COMMENTS ARE OFFERED ON BEHALF OF THE AAU AND SEVERAL OTHER LEADING HIGHER EDUCATION ASSOCIATIONS. TOGETHER THEY SHARE WITH US A PRIMARY CONCERN FOR THE HEALTH OF OUR RESEARCH-INTENSIVE UNIVERSITIES.

FY 1985 NSF BUDGET

TURNING TO THE BUDGET, WE ARE PLEASED TO BE ABLE TO SAY THAT WE ARE IN FULL SUPPORT OF THE ADMINISTRATION'S FY 1985 BUDGET FOR THE FOUNDATION. IT IS, WE BELIEVE, A SOUND INVESTMENT PLAN, ONE WHICH, IF APPROVED AND FUNDED, WILL HELP TO BRING AN IMPORTANT ADDED MEASURE OF BALANCE AND STABILITY TO UNIVERSITY RESEARCH PROGRAMS. WE HOPE THAT THIS COMMITTEE WILL FULLY AND ENTHUSIASTICALLY SUPPORT NSF'S INVESTMENT PROPOSALS FOR RESEARCH IN BASIC SCIENCE, FUNDAMENTAL ENGINEERING, THE SOCIAL, ECONOMIC, AND BEHAVIORAL SCIENCES, AND FOR GRADUATE EDUCATION, AND UPGRADING RESEARCH INSTRUMENTATION IN NSF-FUNDED LABORATORIES. WE ALSO URGE YOUR SUPPORT FOR THE PROPOSED INTERDISCIPLINARY ENGINEERING CENTERS AND FOR THE IMPORTANT INITIATIVES TO IMPROVE ACCESS FOR UNIVERSITY RESEARCHERS TO ADVANCED SCIENTIFIC COMPUTERS. AS OTHER WITNESSES ALREADY HAVE STRESSED IN THEIR STATEMENTS, THESE INITIATIVES ARE URGENTLY NEEDED. THEY WILL ENHANCE RECENT EFFORTS TO ENSURE THE FUTURE VITALITY OF OUR SCIENTIFIC ACTIVITIES.

THE NEW PRESIDENTIAL YOUNG INVESTIGATOR AWARDS PROGRAM WILL ENTER ITS SECOND YEAR IN FY 1985. THE FIRST 200 AWARDS WERE ANNOUNCED RECENTLY. PERHAPS IT IS A MEASURE OF THE QUALITY AND SIGNIFICANCE OF AAU MEMBER INSTITUTIONS TO NOTE THAT 145 OF THE FIRST 200 AWARDS WERE MADE TO YOUNG RESEARCHERS BEGINNING THEIR CAREERS IN AAU MEMBER UNIVERSITIES. IT ALSO IS INTERESTING AND HEARTENING TO NOTE THAT MORE THAN 20 OF THE FIRST 200 AWARDS WENT TO YOUNG WOMEN. WE HOPE THAT THIS IMPORTANT PROGRAM WILL CONTINUE ALONG THE PATH TOWARD THE 1,000 AWARDS PLANNED FOR FY 1988. IT WOULD BE EXTREMELY DAMAGING TO THE CAREERS OF THESE YOUNG SCIENTISTS AND ENGINEERS IF THE STABILITY PROMISED BY THE PROGRAM WERE IN ANY WAY DISRUPTED BY ANY EVENTS THAT MIGHT INTERVENE DURING THE 5-YEAR CYCLE OF EACH AWARD.

WE WOULD URGE, HOWEVER, THAT THE FOUNDATION MONITOR THE PROGRAM CAREFULLY TO ENSURE THAT THE PRICE FOR PROGRESS IN SUPPORTING YOUNG FACULTY IS NOT A LOSS OF SUPPORT FOR ESTABLISHED, PROVEN RESEARCHERS. SOME ARE CONCERNED THAT COMPETITIVE FUNDING FOR ESTABLISHED INVESTIGATORS MAY BE REDUCED IN ORDER TO PROVIDE SUPPORT FOR THE YOUNG INVESTIGATORS. OF COURSE, THIS WOULD BE COUNTERPRODUCTIVE AND DESTABILIZING. WE ARE CONFIDENT THAT THE FOUNDATION WILL TAKE THE STEPS NECESSARY TO ENSURE THAT SUCH UNINTENDED CONSEQUENCES ARE AVOIDED.

PEER REVIEW

THE FUTURE RETURN ON ALL OF THESE ESSENTIAL INVESTMENTS, OF COURSE, WILL BE DETERMINED IN LARGE PART BY THE SOUNDNESS OF THE DECISIONS THAT THE CONGRESS AND THE FOUNDATION MAKE IN THE AWARD OF THE FUNDS. THIS IS PARTICULARLY TRUE OF THE NEW PRIORITY PROGRAMS NOW BEING STARTED. THE PROPOSED NEW ENGINEERING CENTERS AND THE HIGH-PRIORITY PROGRAM DESIGNED TO IMPROVE ACCESS TO SUPERCOMPUTER FACILITIES WILL BE THE OBJECTS OF INTENSE INTEREST AND COMPETITION AMONG POTENTIAL HOST INSTITUTIONS. THAT IS AS IT SHOULD BE. THE FUNDS OUGHT TO BE AWARDED ON THE BASIS OF SCIENTIFIC MERIT IN OPEN COMPETITION AMONG ALL INTERESTED AND QUALIFIED PARTIES. FINAL JUDGMENTS OUGHT TO BE FORMED IN AN OBJECTIVE AND INFORMED MANNER, FREE FROM ANY ACTIONS BY PARTICULAR INDIVIDUALS OR INSTITUTIONS THAT COULD SERVE TO MAKE THE AWARD OF SUCH FUNDS A MATTER OF POLITICAL INFLUENCE RATHER THAN THE QUALITY OF THE WORK TO BE DONE AND THE CAPACITY OF COMPETING APPLICANTS TO CARRY OUT THE WORK AT THE HIGHEST LEVEL.

RECENTLY EACH OF THE ASSOCIATIONS ON WHOSE BEHALF I AM APPEARING TODAY ADDRESSED THE IMPORTANCE OF PROTECTING AND RELYING UPON THE ESTABLISHED PROCESSES OF INFORMED PEER REVIEW IN THE AWARD OF FUNDS FOR RESEARCH AND RESEARCH-RELATED PURPOSES. THE STATEMENTS RECENTLY ADOPTED BY THESE ASSOCIATIONS ARE ATTACHED TO MY STATEMENT (ATTACHMENT A).

GRADUATE EDUCATION

TURNING TO THE SUBJECT OF GRADUATE EDUCATION IN THE SCIENCES AND ENGINEERING, WE ARE PLEASED TO NOTE THAT THE NSF'S BUDGET CALLS FOR THREE IMPORTANT ADJUSTMENTS TO FOUNDATION POLICY. FIRST, THE BUDGET PROVIDES FOR ANOTHER SMALL INCREASE IN THE STIPEND AWARDED TO GRADUATE STUDENTS WHO SUCCESSFULLY COMPETE FOR THREE-YEAR PREDOCTORAL FELLOWSHIPS. FOR THE BETTER PART OF A DECADE THE STIPEND WAS UNCHANGED AND ERODED BY INFLATION. BUT FOR EACH OF THE PAST FEW YEARS THE FOUNDATION HAS TAKEN STEPS TO BRING THE STIPEND MORE INTO LINE WITH THE CURRENT MARKETPLACE FOR THE MOST TALENTED GRADUATES OF OUR UNDERGRADUATE ENGINEERING AND SCIENCE PROGRAMS. THE NSF PROPOSES TO INCREASE THE STIPEND BY $900 TO A LEVEL OF $9,000. AS WELCOME AS THIS CHANGE IS, WE MUST POINT OUT THAT THE STIPEND REMAINS SUBSTANTIALLY BELOW THE NEEDED LEVEL. THE DEPARTMENT OF DEFENSE, FOR INSTANCE, TWO YEARS AGO INITIATED A SMALL, MERIT-BASED, PORTABLE, GRADUATE FELLOWSHIP PROGRAM TARGETED ON SPECIFIC FIELDS OF INTEREST TO THE DEPARTMENT. THAT PROGRAM IS SMALL BY COMPARISON TO THE FOUNDATION'S. ONLY ABOUT 80 FELLOWSHIPS HAVE BEEN AWARDED; THE THIRD CLASS OF ABOUT 40 AWARDS WILL BE AWARDED SHORTLY. THE DOD PROGRAM HAS BEEN CAREFULLY DESIGNED TO RECOGNIZE THE TREMENDOUS MARKET PRESSURES NOW BROUGHT TO BEAR ON YOUNG POTENTIAL SCIENTISTS AND ENGINEERS. IN SEPTEMBER 1984 THE DOD PROGRAM WILL PROVIDE TO FIRST-YEAR STUDENTS STIPENDS OF $13,000 AND FULL TUITION TO THE INSTITUTION OF THE STUDENT'S CHOICE, PLUS AN AWARD OF $2,000 TO THE HOST DEPARTMENT TO BE USED TO STRENGTHEN GRADUATE RESEARCH. BY COMPARISON, THE NSF GRADUATE FELLOWSHIP PROGRAM PROVIDES ONLY A COST-OF-EDUCATION ALLOWANCE TO THE HOST INSTITUTIONS OF JUST $4,900, A FUNDING LEVEL ESSENTIALLY UNCHANGED FOR ALMOST A DECADE AND WOEFULLY INADEQUATE TO MEET THE COSTS OF A QUALITY GRADUATE PROGRAM IN THE SCIENCES AND ENGINEERING. THE NSF PROGRAM ALSO LACKS THE $2,000 GRADUATE RESEARCH AWARD TO THE DEPARTMENT PROVIDED BY THE EXCELLENT DOD PROGRAM.

AN ADDITIONAL INVESTMENT OF $8 MILLION ABOVE THE BUDGET REQUEST WILL ALLOW THE FOUNDATION TO PHASE IN A MORE APPROPRIATE FELLOWSHIP STRUCTURE BY INCREASING THE STIPEND TO THE LEVEL OF THE FIRST-YEAR DOD AWARDS AND TO INCREASE TO AT LEAST $10,000 AND ADJUST THE COST-OF-EDUCATION ALLOWANCE FOR RECIPIENTS OF NEW AWARDS. OF COURSE, IT ALSO WOULD BE EQUITABLE TO ADJUST TO THE DOD LEVELS THE STIPENDS OF SECOND- AND THIRD-YEAR FELLOWS WHO ENTERED THE

PROGRAM IN PRIOR YEARS. (SECOND-YEAR DOD FELLOWS NEXT YEAR WILL RECEIVE A STIPEND OF $13,500, A THIRD-YEAR STUDENT WILL RECEIVE $14,000.) WE ALSO URGE YOUR SUPPORT FOR THE STEPS NSF PROPOSES TO BRING TO MORE THAN 11,600 THE NUMBER OF GRADUATE RESEARCH ASSISTANTS SUPPORTED ON RESEARCH PROJECTS AND TO INCREASE BY 200 THE NUMBER OF POSTDOCTORAL RESEARCHERS SUPPORTED. THE BUDGET REQUESTS THAT 3,500 POSTDOCS BE FUNDED NEXT YEAR. WE SUPPORT THAT PROPOSAL.

UNDERGRADUATE EDUCATION

IN 1980 54% OF ALL BACCALAUREATE DEGREES CONFERRED IN THE UNITED STATES WERE AWARDED BY DOCTORAL GRANTING INSTITUTIONS. OUR RESEARCH UNIVERSITIES, THEREFORE, ARE ALSO DEEPLY CONCERNED ABOUT THE SIGNS OF DECAY IN OUR UNDERGRADUATE SCIENCE, ENGINEERING AND TECHNOLOGY PROGRAMS. ATTENTION MUST BE PAID TO THE NEEDS TO RENEW UNDERGRADUATE CURRICULA AND TO EXPAND RESEARCH OPPORTUNITIES FOR FACULTY AND STUDENTS IN UNDERGRADUATE SETTINGS. WE ARE PLEASED TO NOTE THAT THE FOUNDATION PROPOSES A SIGNIFICANT EXPANSION OF ITS PROGRAM OF RESEARCH AT PREDOMINATELY UNDERGRADUATE INSTITUTIONS. MANY OF THE STUDENTS WHO RECEIVE THEIR UNDERGRADUATE TRAINING IN THE LABORATORIES OF THESE INSTITUTIONS BECOME THE TALENTED GRADUATE STUDENTS IN THE LABORATORIES OF OUR LEADING RESEARCH INSTITUTIONS. WE HOPE THAT THE COMMITTEE WILL FULLY SUPPORT THIS INITIATIVE AND ALSO CONSIDER WAYS TO REBUILD WITHIN THE FOUNDATION A FOCUS ON THE NEED TO MODERNIZE UNDERGRADUATE CURRICULA IN SCIENCE AND ENGINEERING.

THE FOUNDATION PRESENTLY IS NOT PLAYING THE IMPORTANT LEADERSHIP ROLE APPROPRIATE TO IT IN THE UNDERGRADUATE ARENA. AS THE COMMITTEE CONSIDERS THESE QUESTIONS, WE DO HOPE THAT YOU WILL RESIST THE TEMPTATION TO ADDRESS THESE NEEDS BY A MERE REALLOCATION OF FUNDS FROM THE ONGOING RESEARCH PROGRAMS. WE BELIEVE BOTH THE RESEARCH AND EDUCATION NEEDS OF UNIVERSITIES AND COLLEGES MUST BE ADDRESSED ON THEIR MERITS AND NOT BE PITTED ONE AGAINST THE OTHER. OUR RESEARCH AND INSTRUCTIONAL SYSTEMS ARE INTERDEPENDENT AND INTERRELATED. THEY OUGHT TO BE FUNDED WITH AN EYE TOWARD MUTUALLY REINFORCING THEIR EFFECTIVENESS. NOT WEAKENING ONE OR THE OTHER IN A SEARCH FOR MUTUALLY UNSATISFACTORY SOLUTIONS.

RESEARCH INSTRUMENTATION

THE BUDGET REQUEST FOR NSF CONTINUES THE EFFORT TO UPGRADE UNIVERSITY RESEARCH INSTRUMENTATION AND EQUIPMENT. THAT THIS IS AN ESSENTIAL INVESTMENT IS WELL DOCUMENTED BY A REPORT JUST PUBLISHED BY THE FOUNDATION. A SURVEY OF UNIVERSITY RESEARCH INSTRUMENTATION SYSTEMS IN THREE SELECTED FIELDS--THE COMPUTER AND PHYSICAL SCIENCES AND ENGINEERING--PRODUCED THE FOLLOWING TROUBLESOME FINDINGS:

- ONE-FOURTH OF THE 1982 RESEARCH EQUIPMENT INVENTORY IN THESE FIELDS, WHICH HAD AN AGGREGATE PURCHASE PRICE OF $904 MILLION, IS OBSOLETE AND NO LONGER IN RESEARCH USE.

- ONLY 16% OF ALL ACADEMIC RESEARCH EQUIPMENT INVENTORIED IS "STATE OF THE ART."

- MORE THAN 90% OF DEPARTMENTAL CHAIRPERSONS SURVEYED REPORTED THAT THE LACK OF EQUIPMENT INHIBITED THE CONDUCT OF CRITICAL RESEARCH.

- 31% OF ALL INSTRUMENT SYSTEMS IN USE IN 1982 WAS MORE THAN 10 YEARS OLD.

- CONTRARY TO THE EXPECTATIONS OF SOME, UNIVERSITY RESEARCHERS DO SHARE EQUIPMENT TO SIGNIFICANT LEVELS. EACH INSTRUMENT SYSTEM IN USE IN 1982 WAS USED BY A MEDIAN OF SEVEN RESEARCHERS. THE

MEDIAN NUMBER USING EACH PIECE OF COMPUTER SCIENCES EQUIPMENT WAS 25 RESEARCHERS.

- 46% OF THE CHAIRPERSONS RATED THE QUALITY OF SUPPORT SERVICES (E.G., MACHINE SHOP, ELECTRONICS SHOP, ETC.) AS "INSUFFICIENT" (40%) OR "NON-EXISTENT" (6%).
- NSF IS THE LEADING FEDERAL SPONSOR OF RESEARCH EQUIPMENT PURCHASES IN THE PHYSICAL AND COMPUTER SCIENCES, PROVIDING ABOUT 52% OF FEDERAL SUPPORT IN THESE TWO FIELDS.
- DOD IS THE PRIMARY FEDERAL FUNDING AGENCY IN ENGINEERING, ACCOUNTING FOR 45% OF THE FEDERALLY FINANCED ENGINEERING RESEARCH EQUIPMENT.
- NONFEDERAL SOURCES PLAY AN IMPORTANT ROLE. IN 1982 78% OF COMPUTER SCIENCES INSTRUMENT SYSTEMS, 64% OF ENGINEERING SYSTEMS AND 52% OF PHYSICAL SCIENCES INSTRUMENT SYSTEMS WERE NOT 100% FEDERALLY FUNDED. UNIVERSITIES' OWN FUNDS ACCOUNTED FOR AT LEAST 70% OF NON-FEDERAL FUNDS USED FOR EQUIPMENT IN EACH OF THESE THREE FIELDS.
- INDUSTRY FUNDS ACCOUNTED FOR 10% OF NON-FEDERAL RESEARCH EQUIPMENT PURCHASES.

THESE DATA, WE SUBMIT, MORE THAN ADEQUATELY JUSTIFY SUSTAINED FEDERAL INVESTMENT IN UNIVERSITY RESEARCH EQUIPMENT AND A CONTINUED COMMITMENT BY NSF TO THIS AREA.

BUT CONTINUED INVESTMENT BY NSF AND OTHER AGENCIES, WHILE ESSENTIAL, IS NOT A SUFFICIENT RESPONSE TO THE PROBLEM. THE UNIVERSITIES ARE EXTENDING THEIR EFFORTS TO ADDRESS THE NEED. I SHOULD LIKE, THEREFORE, TO TAKE THIS OPPORTUNITY TO TELL YOU ABOUT A NEW PROJECT, NOW BEING UNDERTAKEN BY THREE HIGHER EDUCATION ASSOCIATIONS WITH THE SUPPORT OF NSF AND SEVERAL OTHER AGENCIES, TO EXPLORE ALTERNATIVE SOLUTIONS TO THE EQUIPMENT PROBLEM. THE PROJECT IS SEEKING TO IDENTIFY AND TO EVALUATE NEW APPROACHES TO ACQUIRING, MANAGING, AND USING EQUIPMENT AND TO INFORM THE UNIVERSITY COMMUNITY AND OTHERS OF THE RESULTS OF THESE EVALUATIONS. IT IS A JOINT UNDERTAKING OF THE AAU, NASULGC, AND THE COUNCIL ON GOVERNMENTAL RELATIONS (COGR). THE PROJECT IS BEING SUPPORTED JOINTLY BY THE NATIONAL SCIENCE FOUNDATION, NIH, DOD, DOE, USDA, AND NASA. THE RESEARCH CORPORATION ALSO HAS MADE A CONTRIBUTION. THE EFFORT IS BEING CARRIED OUT UNDER THE GUIDANCE OF AN EIGHT-MEMBER STEERING COMMITTEE DRAWN FROM UNIVERSITIES, INDUSTRY AND THE NATIONAL LABORATORIES.

THE PROJECT GROWS OUT OF A 1980 AAU REPORT NSF TITLED THE RESEARCH INSTRUMENTATION NEEDS OF UNIVERSITIES. THAT REPORT DOCUMENTED THE DIMENSIONS OF THE EQUIPMENT PROBLEM IN 15 LEADING UNIVERSITIES BY COMPARING THEIR RESEARCH EQUIPMENT HOLDINGS WITH THE EQUIPMENT USED IN A NUMBER OF LEADING COMMERCIAL LABORATORIES AND MAJOR NATIONAL LABORATORIES.

THE MEDIAN AGE OF THE EQUIPMENT IN THE UNIVERSITIES WAS FOUND TO BE TWICE THAT OF EQUIPMENT IN THE COMMERCIAL LABORATORIES. BECAUSE THE REPORT WAS PRESENTED TO THE COMMITTEE BY THE ASSOCIATIONS IN EARLIER TESTIMONY, I WILL NOT DISCUSS IT FURTHER.

THE COMPLETE REPORT HAS BEEN PROVIDED TO THE STAFF OF THE COMMITTEE.

AS NEW INVESTMENTS IN RESEARCH EQUIPMENT ARE MADE BY NSF AND BY OTHER AGENCIES, WE ALSO MUST EXPLORE FOR NEW APPROACHES TO HELP ENSURE THAT OUR INVESTMENTS YIELD THE MAXIMUM SCIENTIFIC AND TECHNOLOGICAL RETURN.

RECOGNIZING THIS FACT, NSF ASKED AAU, NASULGC, AND COGR TO CONVENE AN AD HOC PLANNING COMMITTEE TO CONSIDER WHETHER A SPECIAL EFFORT WAS NEEDED TO EXPLORE WAYS TO IMPROVE THE ACQUISI-

TION, MANAGEMENT, OPERATION, AND MAINTENANCE OF EQUIPMENT. THE GROUP IDENTIFIED THE FOLLOWING QUESTIONS:

1. DOES SO-CALLED DEBT OR CREATIVE FINANCING HOLD SIGNIFICANT UNTAPPED POTENTIAL FOR UNIVERSITIES AS A MEANS OF FINANCING NEW RESEARCH EQUIPMENT?

2. WHAT MORE CAN UNIVERSITIES DO TO IMPROVE THE WAY THEY ACQUIRE, MANAGE, AND USE RESEARCH EQUIPMENT?

3. CAN INNOVATIONS MADE BY GOVERNMENT AND COMMERCIAL LABORATORIES BE IDENTIFIED AND ADAPTED FOR USE BY UNIVERSITIES?

4. ARE THERE REGULATORY AND POLICY BARRIERS IN UNIVERSITIES OR THE STATES THAT CAN BE IDENTIFIED AND STEPS THAT CAN BE TAKEN TO REMOVE OR REDUCE THEM?

5. CAN PRESENT TAX INCENTIVES FOR THE DONATION OF RESEARCH EQUIPMENT BE IMPROVED TO INCREASE SUPPORT FROM INDUSTRY?

6. ARE THERE CHANGES THAT OUGHT TO BE MADE IN FEDERAL REGULATIONS THAT WOULD EASE THE SITUATION?

7. ARE THERE ALTERNATIVE METHODS OF DIRECT FEDERAL FUNDING THAT WOULD YIELD A BETTER RETURN ON FEDERAL INVESTMENT?

PHASE I

THE PROJECT BEGAN LAST NOVEMBER. IT IS SCHEDULED TO BE COMPLETED IN FEBRUARY 1985. THE WORK IS PLANNED IN THREE PHASES. DURING PHASE I ANALYSES WILL BE CONDUCTED IN SIX AREAS:

1. THE FIRST IS THE ROLE OF DEBT FINANCING OF RESEARCH EQUIPMENT IN SOUND UNIVERSITY FINANCIAL PRACTICE. CONSIDERABLE ATTENTION IS BEING PAID IN SOME PARTS OF THE RESEARCH COMMUNITY TO DEVELOPING NEW, CREATIVE MODES OF FINANCING THE ACQUISITION OF UNIVERSITY RESEARCH EQUIPMENT. THE POTENTIAL USEFULNESS OF SUCH APPROACHES IS BEING DEBATED INTENSELY, BUT THE TECHNIQUES THEMSELVES OFTEN ARE NOT WELL UNDERSTOOD, AND EXPERIENCE IN THEIR USE VARIES CONSIDERABLY.

   THIS ANALYSIS WILL IDENTIFY THE VARIOUS METHODS OF DEBT FINANCING. IT WILL ASSESS THE DESIRABILITY OF ENCOURAGING DEEPER INVOLVEMENT BY UNIVERSITIES IN THEIR USE, GIVE THE PROS AND CONS OF DIFFERENT FINANCING APPROACHES, AND PROVIDE EXAMPLES OF WHAT HAS WORKED, WHERE THESE TECHNIQUES HAVE WORKED AND WHY. THE ANALYSIS ALSO WILL OFFER SUGGESTIONS TO HELP INSTITUTIONS EVALUATE THE APPROPRIATENESS OF THESE APPROACHES IN THE LIGHT OF THEIR CIRCUMSTANCES.

2. THE PROCUREMENT, MANAGEMENT, AND USE OF RESEARCH EQUIPMENT IS THE SUBJECT OF THE SECOND ANALYSIS.

   OPPORTUNITIES TO STRENGTHEN THE ORGANIZATION AND MANAGEMENT OF UNIVERSITY LABORATORIES AND SUPPORTING SERVICES WILL BE IDENTIFIED AND ASSESSED BY THE SECOND ANALYSIS. PARTICULAR ATTENTION WILL BE PAID TO NEW METHODS OF SHARING EQUIPMENT AMONG DEPARTMENTS AND UNIVERSITIES. THIS ANALYSIS WILL IDENTIFY BARRIERS TO SHARING INHERENT IN THE NATURE OF UNIVERSITY RESEARCH AND WILL CONSIDER POSSIBLE WAYS TO LOWER SUCH BARRIERS. RECENT EXPERIENCE IN USING ADVANCED TECHNOLOGY TO PROVIDE REMOTE ACCESS TO HIGH COST EQUIPMENT WILL ALSO BE EXAMINED. FINALLY, THE MANAGEMENT PRACTICES OF SELECTED COMMERCIAL AND GOVERNMENT LABORATORIES WILL BE REVIEWED TO SEEK APPROACHES THAT MIGHT BE ADAPTED TO THE UNIVERSITY SETTING.

3. THE THIRD ANALYSIS WILL ASSESS TAX INCENTIVES FOR THE DONATION OF EQUIPMENT AND SUGGEST WAYS TO INCREASE SUPPORT FROM THE PRIVATE SECTOR.

THE ECONOMIC RECOVERY TAX ACT OF 1981 PROVIDED NEW INCENTIVES DESIGNED TO STIMULATE DONATIONS OF EQUIPMENT TO UNIVERSITIES BY INDUSTRY. EXPERIENCE TO DATE SEEMS TO INDICATE THAT THIS PROVISION IS HAVING A SIGNIFICANT AND BENEFICIAL IMPACT ON THE PROBLEM. THIS ANALYSIS WILL EVALUATE THE EXPERIENCE TO DATE AND ASSESS OPPORTUNITIES TO STRENGTHEN FURTHER THIS NEW INCENTIVE TO CORPORATE SUPPORT.

4. REDUCTION OF REGULATORY AND POLICY BARRIERS IN STATES AND UNIVERSITIES IS THE SUBJECT OF THE FOURTH ANALYSIS.

A SELECTED NUMBER OF STATE GOVERNMENTS AND UNIVERSITIES WILL BE SURVEYED TO DETERMINE WHETHER THERE ARE POLICY AND REGULATORY BARRIERS TO IMPROVED ACQUISITION, MANAGEMENT, AND USE OF RESEARCH EQUIPMENT. PARTICULAR ATTENTION WILL BE GIVEN TO PROVISIONS IN STATE CONSTITUTIONS AND LAWS WHICH MAY RESTRICT UNIVERSITY EFFORTS TO IMPROVE THEIR RESEARCH LABORATORIES. SOME STATES, FOR EXAMPLE, HAVE LAWS THAT INHIBIT GREATER USE OF CREATIVE FINANCING TECHNIQUES BY UNIVERSITIES. THIS IS A VERY COMPLEX AND DIFFICULT ARENA. BUT WE DO HOPE TO IDENTIFY SUCH BARRIERS AND TO FORMULATE PROPOSALS FOR IMPROVEMENTS OR CHANGES THAT MIGHT BE CONSIDERED BY STATE GOVERNMENTS AND THEIR PUBLIC UNIVERSITIES.

5. IN THE FIFTH ANALYSIS FEDERAL REGULATIONS GOVERNING THE ACQUISITION, MANAGEMENT, AND USE OF EQUIPMENT WILL BE REVIEWED.

RECOMMENDATIONS WILL BE MADE FOR CHANGES TO CURRENT REGULATIONS THAT WOULD FACILITATE EQUIPMENT ACQUISITION, ACHIEVE MANAGEMENT IMPROVEMENTS, AND EASE BURDENSOME REPORTING REQUIREMENTS.

6. THE SUBJECT OF THE SIXTH ANALYSIS IS FUTURE METHODS OF DIRECT FEDERAL INVESTMENT.

THE CURRENT METHODS OR MEANS OF FEDERAL FUNDING OF RESEARCH EQUIPMENT WILL BE EVALUATED. THE BENEFITS AND LIMITATIONS OF THESE METHODS AND THE PROS AND CONS OF CHANGING THEM WILL BE ASSESSED. ALTERNATIVES WILL ALSO BE EXPLORED WITH AN EYE TO MAXIMIZING THE RETURN TO THE NATION OF FUTURE INVESTMENT OF SCARCE FEDERAL RESOURCES. ONE OPTION THAT WILL BE EXPLORED IS THE FEASIBILITY OF RETURNING TO THE USE OF THE PROVEN BUT PRESENTLY UNUTILIZED MECHANISM OF GUARANTEED LOANS TO REHABILITATE UNIVERSITY RESEARCH LABORATORIES AND EQUIPMENT. AS THE COMMITTEE KNOWS, IN 1965 THE HIGHER EDUCATION ACT ESTABLISHED A GUARANTEED LOAN PROGRAM (TITLE VII-C) DESIGNED TO ASSIST WITH THE REHABILITATION OF ACADEMIC LABORATORIES, AND THAT PROGRAM PLAYED A SUBSTANTIAL LEADERSHIP ROLE IN MOBILIZING OTHER STATE, PRIVATE, AND INSTITUTIONAL FUNDS. FOR MORE THAN A DECADE, HOWEVER, THAT LOAN PROGRAM HAS NOT BEEN FUNDED. REINVESTMENT IN THE TITLE VII PROGRAM IS ONE OPTION; OTHERS WILL BE CONSIDERED.

THE PROJECT CONTRACTED WITH THE ACCOUNTING FIRM COOPERS & LYBRAND TO DO THE RESEARCH AND ANALYSIS ON SEVERAL OF THE ANALYSES: DEBT FINANCING, TAX INCENTIVES, FEDERAL AND STATE REGULATIONS, AND FUTURE METHODS OF DIRECT FEDERAL INVESTMENT. THE ANALYSIS OF OPPORTUNITIES FOR IMPROVEMENTS IN UNIVERSITY PROCUREMENT, MANAGEMENT, AND USE OF EQUIPMENT IS BEING CARRIED OUT BY A TEAM OF THREE UNIVERSITY PEOPLE: DAVID LITSTER, DIRECTOR OF MIT'S MATERIALS SCIENCE CENTER; ROBERT BOCK, DEAN OF THE GRADUATE SCHOOL AT THE UNIVERSITY

OF WISCONSIN; AND JULIE NORRIS, ASSISTANT PROVOST OF THE UNIVERSITY OF HOUSTON. THEY ARE NOW COMPLETING VISITS TO 12 UNIVERSITIES AND 8 CORPORATE AND GOVERNMENT LABS.

PHASE II

DURING THE SECOND PHASE OF THE PROJECT, BEGINNING IN THE FALL OF 1984, THE RESULTS OF THE SIX ANALYSES WILL BE DISSEMINATED TO THE UNIVERSITY COMMUNITY. LEADING HIGHER EDUCATION ASSOCIATIONS AND SCIENCE AND ENGINEERING SOCIETIES WILL BE INVITED TO JOIN THE PROJECT AS COOPERATING ORGANIZATIONS AND TO HOST SPECIAL SEMINARS, AS PART OF THEIR REGULARLY SCHEDULED MEETINGS. REGIONAL WORKSHOPS WILL BE HELD IN SEPTEMBER AND OCTOBER 1984. THEY WILL BE DESIGNED TO PROVIDE OPPORTUNITIES FOR TEAMS OF REPRESENTATIVES FROM UNIVERSITIES IN EACH REGION TO SHARE THEIR VARYING PERSPECTIVES ON THE EQUIPMENT PROBLEM. DURING THE WORKSHOPS EACH TEAM WILL BE INVITED TO EXPLORE THE IMPLICATIONS FOR THEIR OWN INSTITUTIONS OF ADOPTING APPROACHES IDENTIFIED BY THE PHASE I ANALYSES.

PHASE III

THE PROJECT'S FINAL PHASE WILL BE AN AGENCY BRIEFING IN WASHINGTON TO REPORT THE RESULTS OF THE PROJECT TO THE SPONSORING FEDERAL AGENCIES AND TO THE CONGRESS. A FINAL REPORT WILL BE SUBMITTED TO THE SPONSORING AGENCIES IN JANUARY 1985.

OBSOLETE FACILITIES--THE OTHER SIDE OF THE EQUIPMENT PROBLEM

ANY DISCUSSION OF THE RESEARCH INSTRUMENTATION NEEDS OF UNIVERSITIES IS INCOMPLETE IF IT DOES NOT ALSO ADDRESS THE INTERRELATED RESEARCH FACILITIES PROBLEM. MODERN RESEARCH INSTRUMENTATION INCREASINGLY REQUIRES SPECIALIZED ENVIRONMENTS, AND MANY OF OUR RESEARCH LABORATORIES ARE OBSOLETE AND INADEQUATE SETTINGS FOR MODERN SCIENCE. THEY OFTEN REQUIRE EXTENSIVE AND COSTLY MODERNIZATION OR REPLACEMENT.

THE DIMENSIONS OF THE FACILITIES PROBLEM ARE ESTIMATED TO BE CONSIDERABLE. IN 1981 THE AAU SURVEYED THE FACILITIES NEEDS OF 15 MAJOR UNIVERSITIES. IN FY 1979 THESE INSTITUTIONS ACCOUNTED FOR ABOUT 22% OF TOTAL FEDERAL OBLIGATIONS FOR UNIVERSITY-BASED RESEARCH. THE SCOPE OF THE SURVEY INCLUDED THE NEEDS OF ONLY PRESENT PROGRAMS AND FACULTY; PLANNED NEW PROGRAMS AND NEW HIRES WERE EXCLUDED. IT FOUND THESE INSTITUTIONS ABLE TO MEET ONLY ABOUT HALF OF THEIR PROJECTED NEEDS FOR REPLACEMENT CONSTRUCTION, MODERNIZATION, REPAIR AND RENOVATION, AND HIGH-COST EQUIPMENT (ITEMS CAPITALIZED AT MORE THAN $100,000). THE REPORT'S EXECUTIVE SUMMARY IS ATTACHED TO MY STATEMENT THIS REPORT ALSO HAS BEEN PROVIDED TO THE STAFF.

THE FACILITIES DEFICIT IS ALMOST CERTAINLY THE MOST SERIOUS LONG-RANGE PROBLEM THAT NOW CONFRONTS OUR RESEARCH UNIVERSITIES AND THE AGENCIES FOR WHICH UNIVERSITY RESEARCHERS PERFORM RESEARCH. A RECENT SURVEY BY THE UNIVERSITY OF CALIFORNIA, FOR INSTANCE, FOUND "STAGGERING" FACILITIES PROBLEMS, INCLUDING ESTIMATED NEEDS FOR CORE ACADEMIC FACILITIES ALONE TOTALING $1.6 BILLION OVER THE NEXT DECADE. TRADITIONAL FUNDING APPROACHES, THE UNIVERSITY CONCLUDED, SIMPLY WILL NOT MEET THEIR NEED FOR FACILITIES REHABILITATION AND REPLACEMENT. FAILURE TO ADDRESS THIS BACKLOG, HOWEVER, WILL CERTAINLY RESULT IN COMPROMISED INSTRUCTIONAL AND RESEARCH PROGRAMS.

WE UNDERSTAND THAT THE NATIONAL SCIENCE FOUNDATION HAS JOINED WITH THE DEPARTMENT OF DEFENSE AND WITH OTHER AGENCIES IN PLANNING A COMPREHENSIVE STUDY OF THE PROBLEM. WE ARE PLEASED INDEED THAT THE FOUNDATION IS IN A LEADERSHIP POSITION TO HELP

DEVELOP BOTH A BETTER UNDERSTANDING OF THE PROBLEM AND SUITABLE SOLUTIONS.

THE PROBLEM ALSO HAS GAINED THE ATTENTION OF 20 MEMBERS OF THE SENATE WHO HAVE JOINED AS COSPONSORS OF SENATE BILL 1537, "THE UNIVERSITY RESEARCH CAPACITY RESTORATION ACT OF 1984." THIS BILL OFFERS A SOUND BLUEPRINT FOR ACTION BY THE NSF AND BY FIVE OTHER AGENCIES. IT CALLS ON EACH OF THESE SIX AGENCIES TO INVEST IN THE REHABILITATION OF THOSE UNIVERSITY LABORATORIES IN WHICH AGENCY RESEARCH PROGRAMS ARE CARRIED OUT. WE HOPE A SIMILAR INVESTMENT PLAN WILL GAIN SUPPORT IN THE HOUSE.

RECENTLY THE NATIONAL COMMISSION ON STUDENT FINANCIAL ASSISTANCE (A BIPARTISAN PANEL CREATED BY P.L. 96-374, THE EDUCATION AMENDMENTS OF 1980) COMPLETED ITS REPORT, "SIGNS OF TROUBLE AND EROSION: A REPORT ON GRADUATE EDUCATION IN AMERICA." THE COMMISSION AFFIRMS THE SERIOUSNESS OF THE INSTRUMENTATION AND FACILITIES DEFICITS AND IT CALLS FOR JUST SUCH AN INVESTMENT STRATEGY FOR RESEARCH INSTRUMENTATION AND FACILITIES REHABILITATION AS THAT PROPOSED BY S. 1537. WE COMMEND THAT REPORT TO THE COMMITTEE'S ATTENTION.

A SERIOUS DEBATE LEADING TO CONCRETE PROPOSALS FOR A FACILITIES REINVESTMENT STRATEGY IS NEEDED. WE HOPE THAT THIS COMMITTEE WILL CONSIDER THE FACILITIES PROBLEM AS PART OF ITS CONTINUING DELIBERATIONS ON THE RESEARCH EQUIPMENT PROBLEM AND THE FY 1985 NSF BUDGET REQUEST.

THANK YOU, MR. CHAIRMAN, FOR THIS OPPORTUNITY TO PRESENT OUR VIEWS TO THE COMMITTEE. I WILL BE PLEASED TO RESPOND TO QUESTIONS.

ATTACHMENT A

ASSOCIATION OF AMERICAN UNIVERSITIES

AAU STATEMENT ON DECISION MAKING IN FEDERAL FUNDING FOR RESEARCH FACILITIES

The Association of American Universities represents institutions whose faculties are deeply engaged in research. We share with many other institutions and individuals a commitment to advancing the quality of the nation's research effort. Since the vitality of this effort is closely linked to the soundness of decisions made about science by public bodies, it is both appropriate and important for the AAU to state its collective views about the ways in which those decisions are best made.

The United States has evolved an admirable but fragile system of awarding federal funds for research. In general, Congress appropriates funds for the support of broad categories of research. Subsequently, the administering federal agency issues guidelines for making applications in a manner that assures fair and open competition. Researchers then submit detailed proposals that are judged by experts, scientists chosen for their ability to make sound and careful judgments in the scientific area involved. This method maximizes the scientific return on the federal investment by assuring that awards are made on the scientific merit of the proposal and the professional merit of the proposer.

The same method governed most federal programs in support of scientific facilities when such programs existed. However, in the early 1970s, most federal government programs in support of the construction and renovation of research facilities ended. The subsequent decade-long failure to attend to the capital base of university science has led to a backlog of need that has hampered American science and placed great stress on the processes by which the government allocates scientific resources.

We believe that processes based on the informed peer judgments of other scientists need to be preserved and strengthened. We therefore urge scientists, leaders of America's universities, and Members of Congress to support the practice of awarding funds for the support of science on the basis of scientific merit, judged in an objective and informed manner. Further, we urge them to refrain from actions that would make scientific decisions a test of political influence rather than a judgment on the quality of the work to be done. These principles should apply in making decisions about scientific facilities as well as in awarding funds for research projects.

Finally, we urge officials of the national Administration and Members of Congress to deal promptly with the decay of the physical plant that houses much of the nation's basic research. S.1537, introduced by Senators Danforth and Eagleton, is a bipartisan effort to deal with this national priority and deserves strong and prompt support.

NATIONAL ASSOCIATION OF STATE UNIVERSITIES AND LAND-GRANT COLLEGES

STATEMENT ON FEDERAL FUNDING OF ACADEMIC FACILITIES

In recent years, federal funding of various higher education programs had decreased markedly. In particular, wholly inadequate resources for facilities has led some institutions to seek direct assistance from Congress. The outcome of such a process could be an irrational system of distribution based solely on political influence. In that regard, the National Association of State Universities and Land-Grant Colleges shares the concerns of the Association of American Universities, the National Academy of Sciences, and others, that this approach is unacceptable, in that it could diminish the capability of higher education to carry out its mission in education and research, and we urge Members of Congress and leaders of colleges and universities to refrain from this practice.

We further urge the Congress to fund Title VII of the Higher Education Act and similar programs in other agencies at reasonable levels, and to insure the systematic allocation of resources to satisfy pressing national concerns.

COUNCIL OF GRADUATE SCHOOLS IN THE UNITED STATES

RESOLUTION NO. 1

RESOLUTION IN DECISION MAKING IN THE FEDERAL FUNDING FOR RESEARCH FACILITIES

WHEREAS the United States has evolved an admirable but fragile system of awarding federal funds for research, and,

WHEREAS this system is dependent upon fair and open competition responding to federal agency guidelines, and peer review judgment by experts in the scientific area to be studied, and,

WHEREAS this method of peer review has governed most federal programs in support of scientific facilities when and where such program exist, and,

WHEREAS most federal programs to support construction and renovation of research facilities have been ended through a shifting of federal priorities, and,

WHEREAS in the absence of such programs colleges and universities are suffering a gradual increasing erosion in their ability to support state-of-the-art research in all scientific fields, and,

WHEREAS CGS member institutions share with many other institutions and individuals a commitment to advancing the quality of the nation's research effort. The vitality of this effort is closely linked to the soundness of decisions made about scientific research by public bodies.

NOW THEREFORE BE IT RESOLVED that the Council of Graduate Schools supports the recently adopted AAU Statement on Decision Making in federal funding for research facilities. CGS urges the national Administration and members of Congress to support the practice of awarding funds for research or facilities on the basis of scientific merit judged in an objective manner. CGS would further urge support for new spending authorities to support research facilities to keep our nation's investment in academic research facilities from becoming out of date.

Passed at the CGS 23rd Annual Meeting 12/83

AMERICAN COUNCIL OF EDUCATION

MEMORANDUM

TO: ACE Board of Directors

FROM: J. W. Peltason

SUBJECT: Proposed Statement on Federal Funding of Research and Instructional Facilities

DATE: January 9, 1984

Community concern has been generated by the recent attempts of several institutions to bypass the customary review process to obtain federal funding for research facilities. The Association of American Universities last fall issued a statement urging scientists, leaders of America's universities, and members of Congress "to support the practice of awarding funds...on the basis of scientific merit...(and) to refrain from actions that would make scientific decisions a test of political influence rather than a judgment on the quality of the work to be done."

Similar statements have been issued subsequently by the National Academy of Sciences, the National Association of State Universities and Land-Grant Colleges, and the American Association of State Colleges and Universities. The ACE Commission on Governmental Relations discussed this matter at its fall meeting, and recommended that the Board adopt the following statement:

"There is a pressing need for increased federal support for the rehabilitation of research and institutional facilities. Established procedures for these support programs involve a system of review to assure equitable consideration and the awarding of funds on the basis of merit.

"At a time when fiscal constraints have severely restricted many federal programs, it is especially important to sustain the process which assures systematic allocation of scarce resources. Therefore we call upon leaders of the academic community and members of Congress to reaffirm the principle of broadly representative review of project proposals in fair and open competition, so that funding decisions continue to represent the best interests of both higher education and the national welfare."

ATTACHMENT

THE NATION'S DETERIORATING UNIVERSITY RESEARCH FACILITIES

A SURVEY OF RECENT EXPENDITURES AND PROJECTED NEEDS IN 15 UNIVERSITIES

EXECUTIVE SUMMARY

OBJECTIVES OF THE SURVEY

This survey of 15 leading universities had three objectives:

-- In the institutions surveyed, document expenditures for research facilities and major ($100,000 or more) equipment, without regard to source of funds, over the last four years in the following six fields:

- Biological Sciences
- Chemical Sciences
- Earth Sciences
- Engineering
- Physics
- Medical Schools (10)

-- Provide responsible estimates, prepared by those universities, of expenditures for research facilities and major equipment that would be required over the next 3 years to meet the research and training needs of only current faculty.

-- From researchers and department heads, acquire assessments of the major consequences for science, industry, and government if the accumulating facilities needs of their institutions are not addressed.

FINDINGS

In many of the science and engineering departments surveyed, a substantial backlog of research facilities and equipment needs is accumulating. Projected funding needs over the next three years equal almost twice the level of expenditures by universities for their research laboratories and equipment over the past four years. Already, institutions often are unable to provide their basic science and engineering researchers and students with either the modern laboratories or equipment needed to conduct state-of-the-art research and education programs.

The loss of federal contributions to the support of research facilities and the absence of compensatory sources of support has forced many institutions to renovate and repair only those facilities in greatest need. Even this work often is carried out in a necessarily piecemeal fashion which is uneconomical over the long term. Working under such conditions, researchers unavoidably compromise their productivity and future competitiveness.

Relatively few construction projects have been completed in recent years in a majority of the physical sciences and engineering departments surveyed. Many institutions estimate substantial needs for new laboratories, for the expanded modernization and repair of old laboratories and for modern research equipment. Details are provided in the following report and the appendicies. The survey's principal findings are the following:

- In the last four years, for the six fields surveyed, fifteen leading universities together spent $400 million from all sources for facilities and major equipment. Half of those expenditures was for a relatively small number of new construction projects; the remaining half, spread over a larger number of generally less costly funding projects, was for facility modernization, major repair and renovation, and special purpose research equipment.

- In the next three years, the 15 universities estimate they should spend almost twice as much ($765 million) just to provide the necessary research facilities and special research equipment for current faculty only. These estimates are in current dollars and, therefore, do not include the added effects of inflation.

- New construction to replace outmoded facilities accounts for almost 60% of total projected funding requirements across all fields.

- In addition, substantial needs for major research equipment were identified in all six fields. These equipment estimates include only major items costing at least $100,000. As the 1980 AAU report to the National Science Foundation found, most departments also have serious deficiencies of less costly analytical instrumentation and support equipment.

RECOMMENDATIONS

The problems of obsolescence in the nation's university research facilities have been growing for more than a decade. To solve them, a new national investment strategy is needed. That strategy should provide direct, balanced support for university facilities from federal agencies and provide investment incentives designed to involve industry, the states, and the universities in a coordinated effort. The following steps are suggested as starting points:

1. Key Executive agencies should develop a mechanism to periodically assess the condition of university research laboratories and the consequences for the nation of that condition. Such assessments should involve the Office of Science and Technology Policy, the National Science Foundation, the Department of Defense, the Department of Energy, the Department of Health and Human Services, the Department of Agriculture and the National Aeronautics and Space Administration. The views of industry and the universities also should be solicited.

If the initial review corroborates the assessment of this suvey the following recommendations should be considered:

2. The facilities and equipment program earlier proposed to be undertaken by the National Science Foundation but deferred should be restored as a priority initiative in FY 1983.

3. The Department of Defense, Department of Energy, the National Aeronautics and Space Administration, the Department of Health and Human Services, and the Department of Agriculture should establish research instrumentation and facilities rehabilitation programs targeted on the fields of science and engineering of primary significance to their missions. The National Science Foundation should assist in the development, implementation, and coordination of those activities.

4. Incentives should be provided to encourage industries and the states to join with universities and the federal government in renewing the nation's university research laboratories.

5. Interest costs incurred in the construction, modernization, renovation, and repair of facilities in which federally supported research programs are carried out should be allowable indirect costs under OMB Circular A-21.

Senator ABDNOR. We moved along quite well here. We are going to recess until 11:05, and we will continue to hear from the public witnesses. We will have a very brief recess here.

[A brief recess was taken.]

Senator LEAHY [presiding]. The subcommittee will come to order.

I apologize for being delayed. I think with the fog, everybody's schedule has been disrupted. The District of Columbia is amazing. The least bit of weather and things tend to come to a screeching halt. You can imagine what it would be like if it was really bad.

I would like to call the first witness, Paul Bragdon, president of Reed College, on behalf of Great Lakes Colleges Association.

STATEMENT OF PAUL E. BRAGDON, PRESIDENT OF REED COLLEGE, ON BEHALF OF GREAT LAKES COLLEGES ASSOCIATION

ACCOMPANIED BY IDA WALLACE

Senator LEAHY. And Ida Wallace. You can always say afterward you were in one of the committee hearings where, on rare occasions, today being one of them, something important happened here today in the U.S. Senate. We are glad to have you here.

Mr. BRAGDON. Good morning, sir. It is a pleasure to be here. My name is Paul Bragdon. I am president of Reed College in Portland, Oreg. Today, I have the pleasure also of representing some similar sister institutions located in the Midwest, the Great Lakes Colleges Association and the Associated Colleges of the Midwest. They and some sister institutions, such as Middlebury, have a history of having produced more than their share of those who have gone on to careers in science and technology. I think that if there is a national consensus on anything at the present time, it relates to a determination to preserve our Nation in the forefront in a very competitive, interdependent world economy.

That determination we see in the present primary races, in the Democratic Party, in which there is clearly agreement on the goal and discussion about strategies. I'm sure that we are going to have a discussion of strategies but not that goal this fall in the Presidential election.

I think in deciding that we wish to remain in the forefront in a world economy and not be an also-ran, it quickly becomes apparent that our maintaining that position and sustaining it depends on the state of science and technology in the country. Then we go quickly to the role of our colleges and universities in keeping us in the forefront in science and technology. Speaking from a college with a history of producing men and women who have gone on to careers in science in great numbers for a number of other institutions that share that record and wish to maintain excellence in society and be a generator of those who go on to careers in science and technology, we are, of course, concerned with our ability to do just that.

Dr. Knapp, the Director of the National Science Foundation, has recognized the role of the sorts of institutions I am speaking for, saying that he was convinced that small colleges had been an important incubator for science and college graduate students and should not be overlooked by NSF.

Last year he said:

> Clearly, these factors are enormously important in producing the Nation's future scientists and engineers. In fact, some undergraduate institutions have a record in this regard that is better than any of our major universities. It is essential, therefore, that the Foundation be sensitive to and supportive of such institutions.

Last year, he also said:

> A new program is planned, aimed at the Nation's undergraduate colleges and designed to encourage and strengthen independent faculty research and the use of advanced undergraduates as research assistants.

Now, it is our understanding that NSF has confirmed an intention implied, anyway, in letters to Congress to commit approximately $19 million to a program called Research in Undergraduate Instruction, or RUI, in fiscal 1985. It would be our interest to have Congress also, the Senate and the Congress as a whole, indicate its commitment to sustaining the position of these colleges as part of the overall effort to reach agreed-upon national objectives.

As you would suspect, presidents of small liberal arts colleges get together from time to time in informal circumstances and talk about problems,. how to pay the faculty, how to provide enough financial assistance for our students, how to sustain the physical plant, how to remain a lively college in a curriculum sense. In two meetings that I have been to recently, last January of this year and June of last year, gathered with about 10 or 12 of my colleagues from across the country from New England to the Pacific Northwest and everywhere in between, a new issue was discussed at both of those meetings. It was, we have been excellent in preparing men and women in science. We have been excellent in science. Are we going to sustain that in the years ahead, given the specification that the costs of this instrumentation and the need for research support for faculty and students, some of which has been declining in recent years?

Senator LEAHY. When you mention the cost in sophistication and scientific instrumentation as one of the factors that is placing this burden especially on small liberal arts colleges, what role should NSF play in addressing the issue of instrumentation?

Mr. BRAGDON. I think there are several things. Of course, there are plant and laboratories, adequate facilities, there is instrumentation. I am not talking about building particle accelerators at small liberal arts colleges

Senator LEAHY. Middlebury doesn't need one of those.

Mr. BRAGDON. But I am talking about standard instrumentation used in courses such as organic chemistry. One of our instruments which costs $30,000 last go-around, would now cost $125,000.

So I think there is the instrumentation aspect. Perhaps more important is to provide the research support so that the best scientists who want to be teachers or undergraduates can find a fruitful career and can engage their students in their research efforts.

Senator LEAHY. Of course, that is also going to require support beyond the equipment. It is going to require salary commitments to make sure we are getting the best teachers. I am very concerned that what is going to happen if we don't is we are going to reach the point where it is going to be the bottom of the round who will end up doing the teaching and not the best. If that happens, the public trust would be such that there will then be reluctance to increase funding because we will have poor teachers, and then you will have this chicken/egg problem.

I think most people feel as I do: We are willing to pay more in education provided we are getting the best. That, I think, should be our concern. I don't mean to give my own speech on this matter, but I am very concerned that we are losing our competitive edge for a whole lot of reasons. I don't mean to put the blame all on the schools, the Government, or anybody else, but I think everybody has to work on it.

We have, as one example, probably the most popular consumer item now, or expensive consumer item right now is a video cassette recorder. They are selling like mad. The newspapers talk about this all the time. That was developedhere in the United States, and because of various corporate decisions, we gave it away. We couldn't make profits within a year or two, and so they gave it away, and now the Japanese make it all. The U.S. industry is totally cut out of that market.

I think your testimony is excellent and all of it will be in the record. I would hope that some of the industry would be listening to this, too, and realize that they have got to have imports.

They can't figure out how they are going to handle this year's balance sheet or which high-level official will get their million dollar bonus or what-not, but actually do something for the future.

Mr. BRAGDON. Yes; I think there are real problems. In that connection, I think there are problems also with respect to formulating and sustaining public policy, in the area of science and technology as well as other areas. I know there have been at least three meetings in greater Washington in the past month on public policy and science and technology and summarized rather well by Susan Garment in last week's Wall Street Journal. That is a very interesting article.

Senator LEAHY. Well, Mr. Bragdon, I appreciate the testimony, and I just hope that schools and the academic field will work with the industrial field, the business field, and government, because we have all got so much at stake here. I see us declining in so many areas. I mentioned the high bonuses, obviously referring to the car manufacturers. If you look at the projections, they are about to go back into a slump in a year or so, and I am never quite sure why it is that at that time when the handwriting is on the wall, the Japanese and the others are going to overtake it one more time, we are giving millions of dollars to people who set the policies who allow people to take us over.

I am also very, very concerned that we don't have the reservoir of young men and women coming along trained in these areas in what is the wealthiest, most powerful nation in the world, trained in a way to help keep us that way.

Mr. BRAGDON. I appreciate your sentiments, and I also appreciate the opportunity to thank you for your interest and support of higher education through the years. It is known by all of us, and we do appreciate it very much. I hope you will have recent occasion to know quite directly.

Senator LEAHY. Thank you. Thank you very, very much.

Mr. BRAGDON. Thank you.

[The statement follows:]

STATEMENT OF PAUL E. BRAGDON, PRESIDENT, REED COLLEGE, ON BEHALF OF THE GREAT LAKES COLLEGES ASSOCIATION, THE ASSOCIATED COLLEGES OF THE MIDWEST, AND REED COLLEGE

I'm glad to have the opportunity to appear before this subcommittee as you consider the fiscal year 1985 appropriation for the National Science Foundation, and to urge upon you support for undergraduate science education, scientific research at the undergraduate level and for scientific instrumentation at undergraduate colleges. I'm President of Reed College in Portland, Oregon, but today I also represent twenty-five undergraduate liberal arts colleges joined in the Great Lakes Colleges Association and the Associated Colleges of the Midwest.[1] These institutions, together with many sister liberal arts colleges, provide the baccalaureate education for a disproportionately large share of the men and women receiving Ph.D.'s in the sciences. Reed, for example, ranks first in the nation for the percentage of male graduates earning doctorates in all fields; and second in the nation, behind the Massachusetts Institute of Technology (MIT) for the percentage of women graduates.[2]

It all boils down to this.

First, Americans in and out of public life, the American people as a whole, are aware of, even anxious about, the challenge to our place in a rapidly changing, intensely competitive, technologically driven, interdependent world economy, and a determination is building to see to it that the United States retains its vigor, dynamism, capacity for change and innovation and productive power and does not become an "also ran" in the emerging world economy.

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[1] The members of the Great Lakes Colleges Association are Albion College, Antioch University, Denison University, DePauw University, Earlham College, Hope College, Kalamazoo College, Kenyon College, Oberlin College, Ohio Wesleyan University, Wabash College and the College of Wooster. The Associated Colleges of the Midwest are Beloit College, Carleton College, Coe College, The Colorado College, Cornell College, Grinnell College, Knox College, Lake Forest College, Lawrence University, Macalester College, Monmouth College, Ripon College and St. Olaf College.

[2] "Baccalaureate Origins of American Scientists and Scholars," Science 193 (1976). See appendices for additional supporting information.

Second, the understanding is general that our determination can only be realized today and tomorrow by establishing and sustaining excellence in science and technology.

Third, it is further understood that excellence in science and technology -- indeed the capacity in general to understand and adapt to rapid change -- depends on the quality of education and ultimately the quality of the colleges and universities of our country.

Fourth, and finally, a desire for results and concern for effective use of resources argue that we sustain and strengthen those colleges with a history of meeting needs now in demand and demonstrating a continuing capability of doing so.

Now, as stated at the outset, small liberal arts colleges of high quality have contributed more than their share of college graduates going on to doctorates in the sciences, a fact acknowledged by Edward A. Knapp, Director of the National Science Foundation, who was reported to be "convinced that small colleges have been an important incubator for science graduate students and should not be overlooked by NSF."[3]

Last year before the House Subcommittee on Science, Research and Technology, Dr. Knapp affirmed this position, making comparisons:

> "Clearly these institutions are enormously important in producing the nation's future scientists and engineers. In fact, some undergraduate institutions have a record in this regard that is better than any of our major universities. It is essential, therefore, that the Foundation

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3. Interview, Science, 222, p. 990, (1983).

> be sensitive to and supportive of such institutions."
> (Underscoring supplied.)

On February 15, 1983, Dr. Knapp appeared before the House Subcommittee on HUD-Independent Agencies of the Committee on Appropriations, and said:

> "A new program is planned aimed at the nation's undergraduate colleges and designed to encourage and strengthen independent faculty research and the use of advanced undergraduates as research assistants."

Given the consensus on national concerns and priorities, the significance of science and technology in addressing that priority, the historic role and present contribution of many of our undergraduate colleges in providing the foundation for careers in science and technology (as well as preparation for coping with the problems presented by change and the need for adaptation) -- given the recognition of the facts and commitment of support at the highest levels of the National Science Foundation -- why am I here trying to make the case for support of undergraduate science education in all of its dimensions instead of merely endorsing a case already made?

In reviewing the requested budget request for 1985 for the National Science Foundation I first note under the category "Science Education" that there is no mention of undergraduate science education, no budget request at all. Next, I note that the significant new program proposed in the 1984 budget plan, Research in Undergraduate Institutions, cannot be found anywhere in the 1985 budget document. It is said that the vanishing program can now be found under the umbrella, Research in Predominantly Undergraduate Institutions, a new category appearing for the first time in the 1985 budget request. I cannot help but share the fear of my colleague, President John B. Davis, Jr., President of Macalester College in St. Paul, Minnesota, who said:

> "The agency's fiscal 1985 budget statement indicates that NSF has changed its emphasis: The Research in Undergraduate Institutions (RUI) program has been swallowed up by one for Predominantly Undergraduate Institutions. This blanket definition includes nearly all the thirty-three hundred accredited higher education institutions in the country and represents the eligibility pattern NSF has always followed. This is a retreat from what Congress planned in appropriations legislation and it is a retreat from what is needed to establish preeminence for this nation in science and technology. Without the visibility and encouragement RUI provided, faculty at non-doctorate institutions will not submit proposals. If Congress does not specifically endorse funds for undergraduate research and instrumentation, the Office of Management and Budget may recommend rescission or elimination of that support."

Some would argue that the fear and skepticism with respect to the disappearance of RUI and the emergence of PUI are unwarranted, and I hope that is the case. Certainly the reaffirmation by the Congress of its desire and intention to provide funds for undergraduate research and instrumentation would go far towards allaying fears and removing doubts.

As you would expect, groups of presidents of small liberal arts colleges get together informally from time to time for shop talk, exchange of sea stories and to discuss common problems of the "industry" -- how to pay adequate salaries to the faculty, how to find enough financial aid for students, how to meet rising costs, how to overcome rising costs for such things as library materials, how to contend with the decline in the college-age population. The principal new question addressed at two informal gatherings in a row of presidents of small liberal arts colleges with a history of providing a foundation for careers in science was, quite simply: Will our colleges be able to continue to do what we've done so well in the sciences in the past? The concern for continuing excellence in sciences arises from two directions. On the one hand the cost and sophistication of scientific instrumentation required are of a different order than in the past; the recruitment and retention of dedicated teacher-scholars in the sciences require adequate research support as well as appropriate instrumentation and adequate facilities; and, ideally, provision should be made for research support for undergraduates. On the other hand, business, industry, foundations and government are providing support for research universities and professional schools and largely or completely ignoring the undergraduate colleges which produce many of the best graduate and professional students. Today these colleges can continue their contributions to careers in science and technology at a time of critical national need. If they're not put in a position of continuing to do so tomorrow and on into the future, the loss will be the nation's as well as their own.

APPENDIX A

[From National Affairs]

STARTING AT THE BEGINNING—THE BACCALAUREATE ORIGINS OF DOCTORATE RECIPIENTS, 1920–80

By Alfred E. Hall

The Office of Institutional Research at Franklin and Marshall College has compiled a ranking of 867 private undergraduate institutions according to the number of students at each school who subsequently received their doctorates. The 867 undergraduate institutions are ranked solely in terms of the number of students who obtained doctorates. There is no attempt to account for differences in school size even though the enrollments of schools differ considerably (e.g., Haverford College and Drake University).

So an interesting question arises. How do these schools compare when variations in enrollment are considered? What happens when the same data are analyzed to determine the rankings of institutions based on the relative number of students completing doctorate degrees?

As might be expected there are some differences. The list included here shows the new rankings of the 100 top institutions in the Franklin and Marshall study, adjusted for the different sizes of the graduating classes of the institutions. Reed College in Portland, Oregon, ranked ninth in the order of number of doctorates, is first when percentage of graduating seniors is considered.

Method

It is important to note at the outset that the Franklin and Marshall study includes only four-year, private, undergraduate institutions, as defined by the American Association of University Professors. This category includes institutions which primarily award baccalaureate degrees or their equivalents and have not "conferred in the most recent three years an annual average of fifteen or more earned doctorates covering a minimum of three nonrelated disciplines." Moreover, because of the immensity of the task, only the top 100 institutions in the Franklin and Marshall list for total doctorate degrees were analyzed.

In order to obtain enrollment information for the 100 institutions, government documents were searched for the 1916–1976 period, which represented a four-year lag period before the times at which the doctorate degrees were earned. Based on available data (e.g., *Fall Enrollment in Higher Education*) and confirmation of figures from the institutions involved, the following periods were selected: 1923-24, 1927-28, 1931-32, 1935-36, 1939-40, 1946-47, 1953-54, 1957-58, 1961-62, 1963-64, 1967-68, 1971-72, 1975-76. The same type of information was recorded for the number of graduating seniors at each institution: 1919-20, 1923-24, 1927-28, 1931-32, 1935-36, 1947-48, 1950-51, 1953-54, 1957-58, 1959-60, 1963-64, 1967-68, 1971-72, 1975-76. Thus, information was recorded for both the number of students enrolled and the number of students graduated at each institution for each of the selected academic years. The final data base included thirteen academic years for the enrollment figures and fourteen for the number of graduates at each institution. Missing data for these years ranged from 1-10 percent.

Two indices were calculated for each institution: one based on enrollment size; the other, on the number of graduating seniors. For the enrollment index, the average enrollment of each school was calculated for the thirteen recorded academic years and then divided by the average number of students from that institution who received doctorate degrees during the

1920-1980 period. A similar ratio was calculated for each institution based on the average number of graduating seniors for the fourteen recorded academic years. The 100 institutions were then ranked separately on the basis of each index, and the rankings were compared to those assigned in the Franklin and Marshall study. Because of the high positive correlation between the rankings of the indices based on enrollment size and the number of graduating seniors ($r = .94$), only the results based on the index for the number of graduating seniors are reported here.

Results

The new rankings of the 100 institutions, adjusted for the different sizes of the graduating classes of the institutions, are shown on pages 42-43. Column 1 lists the new rankings; column 2 shows the original rankings from the Franklin and Marshall study, which are based on the data given in the next to the last column (i.e., the absolute number of students who subsequently received doctorate degrees between 1920 and 1980). The index shown in the last column is the ratio of the average number of graduating seniors to the average number of students who subsequently received a doctorate degree. For example, Reed College, which has an index value of 5.2 graduated—on the average—5.2 seniors for each student who subsequently received a doctorate degree between 1920 and 1980.

As might be expected, the ranks of several institutions were changed dramatically when the size of graduating classes was taken into account. Institutions which typically have had small student enrollments increased in rank by significant margins. For example, Wabash College increased in rank from 46 to 7.5; Kalamazoo College changed from 62 to 14; Earlham College, from 53 to 17. On the other hand, institutions which traditionally have had large undergraduate bodies ranked low on the list. For example, Drake University moved from 49th to 98th; Seton Hall University, from 51st to 99th; Duquesne University from 40th to 95th.

In spite of the high correlation between the rankings of the institutions based on the two indices (enrollment size and the number of graduating seniors), discrepancies in rankings of 15 or more points occurred for ten institutions when enrollment size, rather than the number of graduating seniors, was used to calculate the index. The largest discrepancy occurred for Cooper Union whose rank decreased by 56 points and for George Peabody College whose rank increased by 29.5 points. The change in rankings of the eight other institutions ranged from 15 to 17 points. The figures based on enrollment size, however, are not as accurate as the number of graduating seniors. Also, the enrollments at some schools include a significant number of part-time students. For these reasons, the rankings given on the next page are thought to be a more valid index of the baccalaureate origins of doctoral degrees.

The rankings derived in the present study do not negate the rankings provided by the Franklin and Marshall study. The rankings of the two studies provide different information. The Franklin and Marshall study indicates the rankings of undergraduate institutions in terms of the absolute number of students who subsequently received their doctorate degrees between 1920 and 1980. However, if these data are to be used to make inferences regarding proportionate success of students in graduate programs leading to doctorate degrees, then the relative enrollment rankings provide a better basis of such inferences.

Rankings of Undergraduate Institutions:
Baccalaureate Origins of Doctoral Degrees, 1920–1980
All Fields: Males and Females Combined

Rank					
% Doctorates	*Number of Doctorates*	*School Name*	*Number of Graduates for Selected Years*	*Number of Doctorates: 1920–80*	*Index*
1	9	Reed College	1360	1131	5.2
2	2	Swarthmore College	2465	1642	6.5
3	25	Haverford College	1383	846	7.1
4	1	Oberlin College	5915	2954	8.7
5	3	Amherst College	2978	1386	9.4
6	8	Wesleyan University	2645	1144	10.1
7.5	4	Pomona College	2988	1264	10.3
7.5	46	Wabash College	1472	621	10.3
9	16	Antioch College	2278	955	10.4
10	7	Carleton College	2912	1160	10.9
11	11	College of Wooster	3169	1077	12.8
12	39	Cooper Union	1935	652	12.9
13	26	Grinnell College	2476	827	13.0
14	62	Kalamazoo College	1647	538	13.3
15	42.5	Hamilton College	2029	634	13.9
16	34	Davidson College	2344	714	14.3
17	53	Earlham College	1909	572	14.5
18	13	Williams College	3426	1000	14.9
19	33	Bowdoin College	2524	721	15.3
20	99	Kenyon College	1405	395	15.5
21	21	Franklin & Marshall College	3437	896	16.7
22.5	42.5	Lawrence University	2483	634	17.1
22.5	77	Cornell College	1834	467	17.1
24	12	Wheaton College (IL)	4164	1047	17.3
25	36	Hope College	2770	690	17.5
27	87.5	Whitman College	1741	431	17.6
27	24	Occidental College	3485	862	17.6
27	52	Knox College	2341	578	17.6
29	54.5	Bates College	2400	570	18.3
30	6	DePauw University	5069	1203	18.4
31	85	Juniata College	1853	436	18.5
32	5	Wellesley College	5280	1240	18.6
33	58.5	Berea College	2358	545	18.9
34	61	Beloit College	2380	539	19.2
35	18	Union College (NY)	4271	953	19.5
36	27	Calvin College	3742	820	19.9
37.5	19	St. Olaf College	4328	940	20.1
37.5	20	Mount Holyoke College	4173	904	20.1
39	78	Birmingham-Southern Univ.	2144	463	20.2
40	41	Allegheny College	3000	639	20.5
41	15	Vassar College	4553	958	20.7
42	57	Trinity College (CT)	2662	552	21.0
43	37	Middlebury College	3451	677	22.2
44	83	Willamette University	2250	439	22.3
45	30	Lafayette College	4055	786	22.5
46	67	Muhlenburg College	2581	498	22.6
47.5	60	Augustana College	2926	544	23.4
47.5	74	Worcester Polytechnic Inst.	2572	478	23.4
49.5	28	Colgate University	4260	791	23.5
49.5	38	Denison University	3609	668	23.5
51	68	Dickinson College	2834	497	24.8
52	89	Manchester College	2443	428	24.9
53	86	Alfred University	2481	433	25.0
54	71	Colorado College	2801	487	25.1
55	50	University of Redlands	3410	589	25.2
56	47	Gettysburg College	3589	617	25.3
57	79	Washington & Lee College	2730	459	25.9
58	91	Luther College	2503	419	26.0
59	17	Ohio Wesleyan University	5712	954	26.1
60	64	Macalester College	3112	517	26.2
61.5	10	Smith College	6659	1090	26.6

61.5	31	Wake Forest University	4608	754	26.6
63.5	72	Gonzaga University	2969	483	26.8
63.5	73	Albion College	2965	482	26.8
65	66	Mississippi College	3152	506	27.1
66	14	Manhattan College	6043	966	27.3
67	23	Bucknell University	5441	864	27.4
68	76	Springfield College	2991	470	27.7
69	100	Muskingum College	2520	392	28.0
70	32	College of the Holy Cross	4934	735	29.2
71	45	University of Richmond	4235	623	29.6
72	80	Furman University	3282	457	31.3
73	69	Xavier University	3605	494	31.8
74	81	Canisius College	3352	452	32.3
75	92.5	Colby College	3028	406	32.5
76	95	College of St. Thomas	3027	402	32.8
77	90	Concordia College	3235	425	33.2
78	98	Stetson University	3084	397	33.8
79	92.5	George Peabody College	3196	406	34.3
80	96	University of Scranton	3205	400	34.9
81	63	Abilene Christian University	4263	528	35.2
82	87.5	John Carroll University	3489	431	35.3
83	54.5	Valparaiso University	4868	570	37.2
84.5	56	Providence College	4832	564	37.3
84.5	44	Roosevelt University	6759	624	37.3
86	70	Wittenberg University	4231	492	37.5
87	94	Samford University	3664	403	39.6
88	97	Baldwin-Wallace University	3633	399	39.7
89	22	Drexel University	8050	880	39.9
90	29	University of Dayton	7614	789	42.0
91	84	St. Lawrence University	4346	438	43.2
92	82	St. Joseph's University	4369	440	43.3
93	75	Butler University	5019	471	46.4
94	58.5	LaSalle College	5898	545	47.2
95	40	Duquesne University	7773	647	52.3
96	35	Villanova University	8523	694	53.5
97	65	Bradley University	6453	511	55.0
98	49	Drake University	8566	590	63.3
99	51	Seton Hall University	8618	585	64.2
100	48	DePaul University	8731	592	64.3

Note.—For twelve schools, the totals shown for "number of graduates" were based partially on estimates. The data for a single school year were estimated for Canisius, Cooper Union, Hamilton, John Carroll, and Gettysburg. The number of figures estimated for the other schools were as follows: two years: Springfield, Calvin, St. Thomas, Duquesne, and Scranton; three years: Ohio Wesleyan; four years: George Peabody.

APPENDIX B

DRAFT NO. 3—PRELIMINARY STUDY

A Report Prepared for
Great Lakes Colleges Association

This analysis uses a methodology developed by Professor Alfred Hall of The College of Wooster to take account of the varying size of institutions in comparisons of Ph.D. productivity.

Hall's methodology creates an index (herein called "Hall Index") by dividing the average number of bachelors degrees awarded annually by the average number of Ph.D.'s earned annually. For an institution with an index of 5, this means that one our of five of its graduates go on to earn Ph.D.'s; for an institution with an index of 20, one out of twenty of its graduates go on to earn Ph.D.'s.

For this analysis, the average size of the graduating class for each institution was calculated for the years 1946-76. Because four years is considered a "normal" period for earning a Ph.D., these data on average graduating classes were compared with data on Ph.D.'s earned for 1950-80.

The average size of graduating class was calculated for most institutions using data from ten years during the 1946-76 period. Those years are listed in the sources at the end of this paper.

This analysis focuses on several groups of institutions, including the universities of the Ivy League, the colleges belonging to the Great Lakes Colleges Association and the Associated Colleges of the Midwest, the Big Ten Universities, a set of major technical universities, a group of the most productive public non-Ph.D.-granting institutions, and a list of other institutions known either to be unusually productive for their size or to have produced large total numbers of Ph.D.'s.

Baccalaureate Origins of Doctorate Recipients

Great Lakes Colleges Association

GLCA Colleges	Average (Mean) Bachelors Degrees Conferred 1946-76	Total Ph.D's 1950-80	"Hall" Index[1]
Albion College	269.90	391	20.71
Antioch University	331.90	893	11.15
Denison University	355.50	536	19.90
DePauw University	456.10	903	15.15
Earlham College	189.70	480	11.86
Hope College	280.70	567	14.85
Kalamazoo College	166.40	430	11.61
Kenyon College	162.50	353	13.81
Oberlin College	523.90	2369	6.63
Ohio Wesleyan University	468.50	693	20.28
Wabash College	131.20	508	7.75
College of Wooster	302.50	890	10.20
TOTAL	3638.80	9013	
Group Average	303.23	751.08	12.11

[1] "Hall" Index = Mean Average Bachelors degrees awarded annually divided by Mean Average Ph.D.'s earned annually.

Baccalaureate Origins of Doctorate Recipients

Associated Colleges of the Midwest

ACM Colleges	Average (Mean) Bachelors Degrees Conferred 1946-76	Total Ph.D's 1950-80	"Hall" Index[1]
Beloit College	225.30	439	15.40
Carleton College	257.10	1002	7.70
Coe College	173.50	236	22.06
Colorado College	272.20	390	20.94
Cornell College	160.90	344	14.03
Grinnell College	213.00	720	8.88
Knox College	205.90	482	12.82
Lawrence University	222.80	504	13.26
Lake Forest College	198.88[2]	197[2]	20.19
Macalester College	306.70	470	19.58
Monmouth College	165.70	227	21.89
Ripon College	146.62[2]	172[2]	16.58
St. Olaf College	428.60	791	16.26
TOTAL	2973.20	5874	
Group Average	228.71	459.54	14.93

[1] "Hall" Index = Mean Average Bachelors degrees awarded annually divided by Mean Average Ph.D.'s earned annually.

[2] For Lake Forest and Ripon, Bachelors Degree averages are based on data from 1956-76, and PH.D. date are for 1960-80.

Ivy League Universities

Ivy League Universities	Average (Mean) Bachelors Degrees Conferred 1946-76	Total Ph.D's 1950-80	"Hall" Index[1]
Brown University	839.20	2008	12.54
Columbia University	1508.70	3970	11.40
Cornell University	2080.10	5449	11.45
Dartmouth College	742.90	1793	12.43
Harvard University	1710.40	5717	8.98
Pennsylvania	1831.70	2761	19.90
Princeton University	782.30	2764	8.49
Yale University	1264.20	3477	10.91
TOTAL	10,759.50	27,939	
Group Average	1,344.94	3,492.38	11.55

[1] "Hall" Index = Mean Average Bachelors degrees awarded annually divided by Mean Average Ph.D.'s earned annually.

Baccalaureate Origins of Doctorate Recipients

Big Ten Universities

Big Ten Universities	Average (Mean) Bachelors Degrees Conferred 1946-76	Total Ph.D's 1950-80	"Hall" Index[1]
U. of Illinois	5141.80	6932	22.25
Indiana U.	3439.00	2834	36.40
U. of Iowa	2013.40	2238	27.11
Michigan State U.	4605.80	4027	34.31
U. of Michigan	4028.80	6666	18.13
U. of Minnesota	4689.90	5455	25.75
Northwestern U.	1817.00	2850	19.13
Ohio State U.	4423.30	4749	27.94
Purdue U.	3033.50	3863	23.56
U. of Wisconsin, Madison	3854.50	6199	18.65
TOTAL	37,047.00	45,813	
Group Average	3,704.70	4,581.30	24.26

[1] "Hall" Index = Mean Average Bachelors degrees awarded annually divided by Mean Average Ph.D.'s earned annually.

Technical Institutions

Technical Universities	Average (Mean) Bachelors Degrees Conferred 1946-76	Total Ph.D's 1950-80	"Hall" Index[1]
California Institute of Technology	164.90	1856	2.67
Carnegie/Carnegie, Mellon University	675.80	1701	11.92
Case/Case Western Reserve University	549.70	1858	8.88
Georgia Institute of Technology	1090.20	1228	26.63
Illinois Institute of Technology	524.60	1016	15.49
Iowa State U.	2048.20	2927	20.99
Lehigh U.	665.50	1131	17.65
Massachusetts Institute of Technology	822.80	5511	4.48
Polytechnic Institute of New York	400.90	978	12.30
Rensselear Polytechnic Institute	718.80	1944	11.09
Rice U.	417.10	1520	8.23

Baccalaureate Origins of Doctorate Recipients

Technical Institutions

Technical Universities	Average (Mean) Bachelors Degrees Conferred 1946-76	Total Ph.D's 1950-80	"Hall" Index[1]
Virginia Polytechnic Institute and State U.	1513.40	1222	37.15
TOTAL	9591.90	22,892	
Group Average	799.32	1,907.67	12.57

[1] "Hall" Index = Mean Average Bachelors degrees awarded annually divided by Mean Average Ph.D.'s earned annually.

Leading Ph.D. Producers among Public Non-Ph.D.-Granting Institutions[1]

Public Non-Ph.D.-Granting Institutions	Average (Mean) Bachelors Degrees Conferred 1946-76	Total Ph.D's 1950-80	"Hall" Index[2]
City University of New York			
Brooklyn College	2535.30	4932	15.42
City College	2791.30	7095	11.80
Hunter College	1455.90	2035	21.46
Queens College	1818.30	2325	23.46
CUNY Total	8600.80	16,387	
California State U., Fresno	1536.50	756	60.97
Central Missouri State U.	844.90	485	52.26
Eastern Illinois U.	818.40	529	46.41
Eastern Michigan U.	1409.70	596	70.96
Montclair State U. (NJ)	773.10	498	46.57
Murray State U. (KY)	781.88[3]	439[3]	35.62
Southeast Missouri State U.	666.50	424	47.16
Southwest Missouri State U.	753.80	575	39.33
Western Kentucky U.	856.11	483	53.17
TOTAL	17,041.69	21,172	
oup Average	1,310.90	1,628.62	40.35

[1] Derived from "Forty Leading Doctorate-Granting Institutions and Their Three Hundred Leading Baccalaureate Sources, FY 1958-1966," Appendix C, Doctorate Recipients from United States Universities 1958-1966. National Academy of Sciences. Washington, D.C., 1967.

[2] "Hall" Index = Mean Average Bachelors degrees awarded annually divided by Mean Average Ph.D.'s earned annually.

[3] For Murray State, Bachelors Degree average based on data from 1956-76, and Ph.D. data are for 1960-80.

Fourteen Highly Productive
Baccalaureate Sources of Ph.D.'s
Nondoctorate Degree Granting Institutions

Institution	"Hall" Index[1]
Reed College	4.39
Swarthmore College	4.98
Haverford College	5.55
Oberlin College	6.63
Amherst College	7.14
Pomona College	7.56
Carleton College	7.70
Wabash College	7.75
Cooper Union	7.80
Grinnell College	8.88
Williams College	9.96
Hamilton College	10.13
College of Wooster	10.20
Davidson College	10.50

Fourteen Highly Productive
Baccalaureate Sources of Ph.D.'s
Doctorate Degree Granting Institutions

Institution	"Hall" Index[1]
California Institute of Technology	2.67
Massachusetts Institute of of Technology	4.48
U. of Chicago	4.47
Rice University	8.23
Princeton University	8.49
Case/Case Western Reserve University	8.88
Harvard University	8.98
Yale University	10.91
Rensselaer Polytechnic Institute	11.09
Columbia University	11.40
Cornell University	11.45
Carnegie/Carnegie Mellon University	11.92
Stanford University	12.29
Polytechnic Institute of N.Y.	12.30

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[1] "Hall" Index = Mean Average Bachelors degrees awarded annually divided by Mean Average Ph.D.'s earned annually

APPENDIX C

Baccalaureate Origins of Doctorate Recipients in Chemistry (1920-1980) For Selected Undergraduate Institutions

Alfred E. Hall
The College of Wooster

The Office of Institutional Research at Franklin and Marshall College has compiled rankings of 867 private undergraduate institutions according to the number of students at each school who subsequently received their doctorates between 1920 and 1980 (1). The rankings of undergraduate institutions by Franklin and Marshall were done for the total number of doctorate recipients, for particular divisions (e.g., science), and for individual disciplines (e.g., chemistry). The Franklin and Marshall rankings, however, were based solely on the number of students who subsequently obtained doctorate degrees; differences in school size were not taken into account.

The focus of the present report is the institutions which were ranked as the top 101 undergraduate institutions in the Franklin and Marshall study in terms of the number of students who subsequently received a doctorate degree in chemistry between 1920 and 1980. As indicated previously, these institutions were ranked in the Franklin and Marshall study in terms of the total number of students who received a doctorate degree in chemistry. In the present study, new rankings were obtained by taking into account the number of students who graduated from each institution with a degree in chemistry during selected years. The expectation was that the new rankings would be less affected by the different sizes of the institutions from which the pool of doctorate recipients was drawn.

Data Base. The top 101 ranked undergraduate institutions in chemistry were obtained from the Franklin and Marshall list. This pool includes four-year, private, undergraduate institutions, as defined by the American Association of University Professors (2), i.e., those institutions which primarily award baccaluareate degrees or their equivalents and have not "conferred in the most recent years an annual average of fifteen or more earned doctorates covering a minimum of three nonrelated disciplines" (2, p. 232). The data of the baccalaureate origins of doctorate degrees in chemistry were obtained from files maintained by the National Research Council (3). Since 1957 the data have been accumulated by NRC from information submitted by each doctorate recipient. Between 1920 and 1957, information on doctorate recipients was obtained by NRC from registrars' records and graduation lists.

Methodology for Rankings. In order to obtain information on the number of students who graduated with a major in chemistry at each institution, government documents (e.g., Earned Degrees Conferred by Higher Educational Institutions) were searched for the 1916-1976 period, which represented a four-year lag period before the times at which the doctorate degrees were earned. Information, however, was available only for the years following World War II; before this time the number of graduating seniors in each discipline was not recorded. The records were then sent to the registrar and chair of the department of chemistry at each institution. Additional figures were supplied by many of the institutions; however, relevant data before 1947 were still not available for more than half of the institutions.

Therefore the new rankings were based on nine academic years for which almost complete data were available for the participating institutions (at approximately four year intervals): 1947-48, 1950-51, 1953-54, 1957-58, 1959-60, 1963-64, 1967-68, 1971-72, and 1975-76. For these years, the data were complete for 92 to 101 of the institutions.

The new rankings were obtained by calculating the average number of doctorate recipients for each institution during the 1920-1980 period and the average number of graduating seniors with a major in chemistry for the nine academic years indicated above. (When an institution was founded after 1916 or where figures for majors were unavailable, the necessary adjustments in calculating averages were made.) An index was calculated by dividimg the average number of graduating majors in chemistry by the average number of doctorate recipients for each institution. The index is an estimate of the average number of graduating seniors with a major in chemistry per student who subsequently received a doctorate degree in chemistry. For example, Swarthmore College, which has an index value of 4.07, is estimated to have had, based on the available data, 4.07 graduating seniors in chemistry during 1916-1976 for every student who subsequently received a doctorate degree in 1920 to 1980.

The index values are inflated, given that they are based on 1947-1976 figures, when undergraduate enrollments were higher. It is assumed, however, that whatever biasing factors operated to determine the value of the index, acted in a constant fashion for each of the participating institutions. Also, it should be noted that the availability of a major in chemistry varied considerably among the 101 participating institutions during the 1916-1976 period. However, it is assumed that the necessary preparatory course work for graduate study in chemistry was available at each institution during the 1916-1976 period. Thus, in spite of the bias, the numerical value of the index can be used to rank the participating institutions on a relative basis.

Results. Table 1 shows the ranks of the 101 institutions according to the calculated index, based on the 1947-76 enrollment figures; the numerical value of the index for each instition is shown in the last column. Also included for each institution are: (1) the number of doctoral recipients between 1920 and 1980; (2) the ranks of these frequencies (which correspond to the rankings in the Franklin and Marshall study); and (3) the estimate of the average number of students who graduated with a major in chemistry between 1947 and 1976.

Inspection of the table shows that the correlation between the new rankings and the rankings reported in the Franklin and Marshall study is low (r = .40). For example, Harvey Mudd College (which awarded its first degree in 1959) is ranked third in terms of the new rankings, whereas it ranked 69 in the Franklin and Marshall list. Similarly, Kings College (which awarded its first degree in 1950) is ranked fifth, whereas it received a rank of 74.5 in the Franklin and Marshall study. The ranks of some schools remain approximately the same: Oberlin College, which ranked first in the Franklin and Marshall study, is now ranked fourth; Reed College's ranks were 9 and 8.5, respectively. The ranks of other schools changed dramatically: Colgate University, which ranked 53 in the Franklin and Marshall study, is ranked 20th in the present study. Similarly, Hamline University is ranked 33rd, whereas it was ranked 77th in the Franklin and Marshall study. Reverse changes also occurred, mainly due to the large number of chemistry majors at these schools: Franklin and Marshall College dropped from 2.5 to 38; St. Olaf College dropped from 4.5 to 46. It should be noted, however, that some of the differences between schools are small.

As previously indicated, the rankings in Table 1 were derived from estimates of the average number of graduates with a major in chemistry at each institution, based on 1947 to 1976 enrollment figures. The complete time span(1916 to 1976), which corresponds to the period in which the doctorate degrees were obtained (1920 to 1980), was not used because the relevant enrollment figures for 1916 to 1947 werenot available for more than half of the institutions. For 39 of the institutions, however, more complete enrollment figures (i.e., the number of graduating seniors with a major in chemistry) were available for the period from 1920 to 1976. In particular, enrollment figures were available for the following 16 academic years: 1919-20, 1923-24, 1927-28, 1931-32, 1935-36, 1939-40, 1943-44, plus the nine academic years previously identified (i.e., 1947-76). Within this set, complete data were available for all but 14 institutions. The missing figures for the latter institutions ranged from 1 to 3 academic years, and most occurred in the earlier period (e.g., 1919-20) or in a war year (i.e., 1943-44).

For these 39 institutions, the index value was calculated using the enrollment figures for 1920-76. These values are obviously more accurate than those given in Table 1. However, relative rankings can only be done within these institutions. The corresponding ranks are shown in Table 2.

For each of the 39 institutions, Table 2 shows: (1) the rank of the institution based on the 1920-76 index (col. 1); (2) the corresponding average number of graduating seniors with a major in chemistry (col. 6); and (3) the value of the 1920-76 index (col. 7). For comparison, the average number of graduating seniors with a major in chemistry, based on the 1947-76 figures, and the corresponding index values are shown in columns 4 and 5.

As expected, the indices based on 1920-76 figures are generally lower than the corresponding values based on 1947-76 enrollment figures. Disregarding the three institutions which awarded the first degree after 1947, 24 (or 67%) of the institutions had lower index values by .5 or more points. The differences ranged was from .56 to 4.14. For six institutions, the index value increased from .28 to 3.90 points, with most increasing less than one point. Wesleyan University's index remained unchanged.

It is important to note that because of the different data bases and the different pools of institutions, the rankings of institutions across Tables 1 and 2 cannot be directly compared. If, however, the ranks of the 39 institutions, based on the 1947-76 data, are themselves ranked, a more direct comparison of the rankings betweens Tables 1 and 2 can be made. When this was done, 18 of the institutions received higher ranks based on the 1920-76 enrollment figures than when only the data for the 1947-76 period were used. Of these 18 institutions, 7 (18%) improved their ranks by more than four points: Clarkson (+11), Dayton (+9), Loras (+8), Villanova (+8), Lafayette (+7), Furman (+7), and Reed (+4.5). An additional 18 institutions received lower ranks when the more complete 1920-76 data were used. Of these institutions, 7 (18%) obtained lower ranks by more than four points: Colgate (-20), Philadelphia College of Pharmacy and Science (-8), Worcester Polytechnic Institute (-8), Monmouth (-8), Kings (-6), Harvey Mudd (-5), and Rochester Institute of Technology (-5). The ranks of three institutions were identical: Kalamazoo, Lebanon Valley College, and Bowdoin. Overall, 14--or only approximately one-third--of the institution changed ranks by more than 4 points when the 1920-76 data were used to estimate enrollment figures, compared to using the 1949-76 data. However, it is not possible to determine how the ranks in Table 1 would be changed for individual institutions if complete enrollment data were available for all institutions.

It is important to note that the rankings derived in the present study do not negate the rankings provided by the Franklin and Marshall study. The rankings of the two studies provide different information. The Franklin and Marshall study indicates the rankings of undergraduate institutions in terms of the absolute number of students in each school who subsequently received their doctorate degrees in chemistry between 1920 and 1980. The rankings of the present study are based on estimates of the proportion of chemistry major graduates at each institution who subsequently received their doctorate degrees.

TABLE 1

Baccalaureate Origins of Chemistry Majors (1920-80):
Rankings of Undergraduate Institutions Based on Estimated Number of Graduating Majors (1947-76)

Rank Index 1947-76	School	No. of Doc. Deg. 1920-80	F&M Rank	Aver. No. Majors 1947-76	Index 1947-76
1	Swarthmore C.	105	23	7.00	4.07
2	De Pauw U.	161	6	10.78	4.08
3	Harvey Mudd C. (1959)	59	69	11.00(1)	4.10
4	Oberlin C.	298	1	20.78	4.25
5	Kings C. (Pa) (1950)	57	74.5	7.88	4.29
6	Union U. (NY)	149	7	10.67	4.37
7	Trinity C.	73	50	5.25(1)	4.39
8.5	Reed C.	138	9	10.22	4.52
8.5	Wabash C.	108	18.5	8.00	4.52
10	Worcester Poly. Inst.	108	18.5	8.33	4.70
11	Cornell C. (Ia)	64	64	5.00	4.77
12	Villanova U.	115	13	9.56	5.07
13	Washington & Lee U.	51	91.5	4.44	5.31
14	Grinnell C.	107	21.5	9.33	5.32
15	Kenyon C.	50	95.5	4.43(2)	5.40
16	Juniata C.	114	14	10.44	5.5[illegible]
17	Kalamazoo C.	126	11	11.78	5.7[illegible]
18	Pomona C.	88	35	8.44	5.85
19	Monmouth C.	92	33	8.89	5.89
20	Colgate U.	71	53	6.89	5.92
21	Phil. C. of Phar. & Sci.	86	38	8.44	5.99
22.5	Wesleyan U.	102	27.5	10.11	6.05
22.5	Amherst C.	103	25	10.22	6.05
24	Clarkson C. of Tech.	111	16	11.22	6.17
25	Lawrence U.	71	53	7.22	6.20
26	Davidson C.	87	36	9.00(1)	6.31
27	Loras C.	59	69	6.11	6.32
28	Central Methodist C. (Mo)	62	67	6.56	6.45
29	Coe C.	52	87.5	5.56	6.52
30	Augustana C.	86	38	9.22	6.54
31	Providence C.	103	25	11.11	6.58
32	St. Mary's C. (Mn)	52	87.5	5.67	6.65
33	Hamline U.	56	77	6.11	6.66
34	Antioch C.	75	48	8.22	6.69
35	Carleton C.	118	12	13.11	6.78
36	Calvin C.	102	27.5	11.44	6.84
37	Drew U. (1932)	52	87.5	7.44	7.01
38	Franklin & Marshall C.	174	2.5	21.11	7.40
39	Hope C.	174	2.5	21.22	7.44
40	Occidental C.	64	64	7.89	7.52
41	C. of St. Thomas	107	21.5	13.22	7.54
42	U. of Dayton	67	59	8.33	7.58
43	Muhlenberg C.	72	51	9.00(1)	7.62
44	Haverford C.	103	25	12.89	7.63
46	St. Olaf C.	171	4.5	22.22	7.93
46	St. John's U. (Mn)	59	69	7.67	7.93
46	Manhattan C.	129	10	16.78	7.93
48	Loyola U. (La)	49	100	6.44	8.02
49	Knox C.	84	41	11.11	8.07
50	Rochester Inst. of Tech. (1948)	57	74.5	14.00(2)	8.11
51	Hiram C.	50	95.5	6.67	8.14
52	Allegheny C.	99	30	13.25(1)	8.16
53	Bates C.	77	45	10.44	8.27
54	Earlham C.	54	82.5	7.44	8.40
55	Drexel U.	142	8	19.57(2)	8.41

Notes: (1) A date against a college name indicates the year in which the first baccalaureate degree was conferred, if after 1920. An exception is St. Peter's College which was closed during WWI.

(2) A number in parentheses against a figure for "average number of majors" indicates the number of years for which there were missing data.

TABLE 1 (cont.)

Rank Index 1947-76	School	No. of Doc. Deg. 1920-80	F&M Rank	Aver. No. Majors 1947-76	Index 1947-76
56	Spring Hill C.	50	95.5	7.00	8.54
57	C. of Wooster	171	4.5	24.22	8.64
58	Beloit C.	57	74.5	8.11	8.68
59	Lebanon Valley C.	94	31	13.67	8.87
60	Loyola C. (Md)	63	66	9.22	8.93
61	Furman U.	54	82.5	8.11	9.16
62	Middlebury C.	71	53	10.78	9.26
63	Alfred U.	55	79	8.38(1)	9.29
64	Mount Holyoke C.	93	32	14.22	9.33
65	Williams C.	108	18.5	16.67	9.42
66.5	Ohio Wesleyan U.	85	40	13.67	9.81
66.5	Bradley U.	67	59	10.78	9.81
68	C. of the Holy Cross	89	34	14.56	9.98
68	U. of Scranton	54	82.5	9.38(1)	10.60
70.5	Gettysburg C.	79	43	13.78	10.64
70.5	Wheaton C. (Il)	79	43	13.78	10.64
72	Manchester C.	69	56.5	12.75(1)	11.27
73	Xavier U.	86	38	16.11	11.43
74	Lafayette C.	113	15	21.22	11.46
75	U. of Lowell (1932)	70	55	16.40(4)	11.48
76	Hamilton C.	52	87.5	10.00(1)	11.73
77	St. Peter's C. (1932)	75	48	18.00(2)	11.76
78	De Paul U.	66	61.5	12.75(1)	11.78
79	Muskingum C.	49	100	9.56	11.90
80	Denison U.	55	79	10.78	11.96
81	LaSalle C. (Pa)	76	46	15.12(1)	12.14
82	Marietta C.	58	71.5	11.56	12.16
83	Mt. Union C.	54	82.5	10.78	12.18
84.5	West Va. Wesleyan C.	55	79	11.00	12.20
84.5	Bowdoin C.	75	48	15.00	12.20
86	St. Joseph's U.	79	43	15.88(1)	12.26
87	St. Vincent C.	49	100	9.89	12.31
88	Duquesne U.	69	56.5	14.00(2)	12.38
89	Canisius C.	108	18.5	22.00	12.43
90	John Carroll U.	57	74.5	12.11	12.96
91	Macalester C.	50	95.5	10.67	13.02
92	Bucknell U.	100	29	21.67	13.22
93	Washington & Jefferson C.	51	91.5	11.62(1)	13.90
94	Wittenberg U.	50	95.5	12.38(1)	15.10
95	Wake Forest U.	52	87.5	12.89	15.12
96	Mississippi C.	58	71.5	14.88(1)	15.65
97	St. Lawrence U. (NY)	50	95.5	15.22	18.57
98	Valparaiso U.	52	87.5	16.11	18.90
99	Seton Hall U.	66	61.5	22.00	20.33
100	Ursinas C.	64	64	21.56	20.55
101	U. of Richmond	67	59	30.12(1)	27.42

TABLE 2

Baccalaureate Origins of Chemistry Majors (1920-1980): Rankings of Selected Undergraduate Institutions Based on Estimated Number of Graduating Majors (1920-76)

Rank: 1920-76 Index	School	No. of Doc. Deg. 1920-80	Aver. No. Majors 1947-76	1947-76 Index	Aver. No. Majors 1920-76	1920-76 Index
1	Villanova U.	115	9.56	5.07	6.20(1)	3.29
2	Reed C.	138	10.22	4.52	7.88	3.48
3	De Pauw U.	161	10.78	4.08	9.38	3.55
4	Wabash C.	108	8.00	4.52	6.33(1)	3.58
5	Clarkson C. of Tech.	111	11.22	6.17	6.62	3.64
6	Oberlin C.	298	20.78	4.25	18.19	3.72
7	Harvey Mudd C. (1959)	59	11.00(1)	4.10	11.00(1)	4.10
8	Union U. (NY)	149	10.67	4.37	10.07(1)	4.12
9	Loras C.	59	6.11	6.32	4.06	4.20
10	Kings C. (Pa) (1950)	57	7.88	4.29	7.88	4.29
11	Kalamazoo C.	126	11.78	5.70	9.94	4.81
12	Grinnell C.	107	9.33	5.32	8.69	4.95
13	U. of Dayton	67	8.33	7.58	5.83	5.31
14	Hamline U.	56	6.11	6.66	5.08(3)	5.53
15	Antioch	75	8.22	6.69	6.93(1)	5.64
16	Worcester Poly. Inst.	108	8.33	4.70	10.00	5.65
17	Drew U. (1932)	52	7.44	7.01	6.08	5[illegible]
18	Hope C.	174	21.22	7.44	16.38	5.74
19	Wesleyan U.	102	10.11	6.05	10.12	6.05
20	Monmouth C.	92	8.89	5.89	9.31	6.17
21	Furman U.	54	8.11	9.16	5.53(1)	6.25
22	Phil. C. of Phar. & Sci	86	8.44	5.99	8.88	6.30
23	Loyola C. (Md)	63	9.22	8.93	7.12	6.89
24	Haverford C.	103	12.89	7.63	11.77(3)	6.97
25	Knox C.	84	11.11	8.07	9.73(1)	7.07
26	Lebanon Valley College	94	13.67	8.87	10.94	7.10
27	Lafayette C.	113	21.22	11.46	13.56	7.32
28	Ohio Wesleyan U.	85	13.67	9.81	10.94	7.85
29	Xavier U.	86	16.11	11.43	11.31	8.02
30	Roch. Inst. of Tech. (1948)	57	14.00(2)	8.11	14.00(2)	8.11
31	Williams C.	108	16.67	9.42	14.62	8.26
32	Mount Holyoke C.	93	14.22	9.33	14.12	9.26
33	Colgate U.	71	6.89	5.92	11.43(2)	9.82
34	Denison U.	55	10.78	11.96	9.50	10.54
35	Gettysburg C.	79	13.78	10.64	14.71(2)	11.36
36	Bowdoin C.	75	15.00	12.20	14.31	11.64
37	Valparaiso U.	52	16.11	18.90	13.15(3)	15.[illegible]
38	Ursinas C.	64	21.56	20.55	18.25	17.[illegible]
39	St. Lawrence U. (NY)	50	15.22	18.57	15.71(2)	19.17

Notes: (1) A date against a college name indicates the year in which the first baccalaureate degree was conferred, if after 1920.

(2) A number in parentheses against a figure for "average number of majors" indicates the number of years for which there were missing data.

APPENDIX D

Excerpt from Testimony of
Dr. John B. Davis, Jr.,
President, Macalester College,

In our Colleges a kind of education occurs that is unusual for undergraduates enrolled in research universities. Our students become true apprentices of master teachers and researchers, a relationship that is difficult to establish in large universities where undergraduates cannot be the chief concern of senior faculty. These young apprentices can be guided to pose research questions, test alternative hypotheses, do thorough laboratory analyses and tentatively answer one set of questions that raise more issues for inquiry. This is the exhilaration of true science, that clear product of collaborative research that confirms a young man's or woman's plan to choose this career path. These students have truly learned how to learn. Moreover, individually they have acquired these investigative skills in an environment that promotes awareness of the ethical issues posed by scientific advance.

Many of our professors are serious researchers as well as outstanding teachers. A good example is the Antarctic research directed by Macalester's Gerald Webers with NSF support, ongoing geological exploration and study that regularly includes undergraduate research assistants and has resulted in several scholarly publications co-authored by Webers and his students. Macalester's life sciences professor, Hans Wendt, is investigating a range of subjects from chronobiology to cancer etiology, working with his students as co-researchers, and ultimately co-authors. Another professor, Walter Mink, created a program in neuroscience in which biology, chemistry and psychology faculty co-teach selected interested students. Several of the latter are now headed for interdisciplinary science Ph.D.'s It is inconceivable that the cause of science could be served by denying the encouragement of research support to these teacher/scholars. Indeed their teaching vitality requires continuing supporting research.

That it is cost-effective to provide support for improved undergraduate science education is clear to us in Minnesota when we report that Minnesota's private undergraduate colleges awarded in 1982-83 52 percent of all bachelor's degrees in mathematics, 51 percent of all bachelor's degrees in physical sciences, and 46 percent of all bachelor's degrees in life sciences despite graduating only 31 percent of the state's undergraduate students. Similar figures would be reported by most states that have a number of undergraduate colleges.

I also want to call to your attention the need to continue support for instrumentation in undergraduate colleges. I can illustrate how important that is: one of our biology professors described a student trying to get accurate, consistent measurements on a specimen in physiology, full of frustration because the monitoring instrument was outdated, the pen kept breaking or running dry, the speed was undependable. She remarked, "Science is boring and tedious: how could anyone commit herself to a career like this!" When we were finally able to replace the apparatus and investigation could proceed to keep pace with her intellectual curiosity, she could experience the excitement and dynamism of research, and, I am happy to report, is now pursuing a doctorate in biochemistry. We need good, state-of-the-art instrumentation to assure accuracy of results, transferrable experience and better understanding.

FEDERAL EMERGENCY MANAGEMENT AGENCY

STATEMENTS OF:
ED McCORMACK, EXECUTIVE DIRECTOR
JACK GERARD, CHAIRMAN, JOINT COUNCIL, INTERNATIONAL SOCIETY OF FIRE SERVICE INSTRUCTORS

Senator LEAHY. Ed McCormack, the executive director and Jack Gerard, chairman of the Joint Council of the International Society of Fire Service Instructors. If you would come forward, please.

As with the other witnesses, of course, your testimony will be placed in the record in full. If one of you would like to give me a summary of the statement, then I will have a couple of questions that I would like to ask you.

Mr. GERARD. All right, Mr. Chairman.

I am John Gerard. I am the chairman of the Joint Council of National Fire Service organizations. This is Ed McCormack, president of the International Fire Service Instructors. I think the titles got a little confused there.

This morning, today, my comments reflect the position of the National Fire Protection Association rather than the joint council. NFPA is based in Quincy, Mass. We are a scientific educational organization that is dedicated, and has been for almost 100 years, to reducing the human and economic losses caused by fire in the United States. Consistent with these objectives over the years, we have watched FEMA and the Fire Administration and the National Fire Academy. We believe that level funding for these two agencies is really not consistent with the needs of the American people.

In fact, the Fire Administration and the Fire Academy are two exemplary programs in the Federal Government and probably should be held up as an example for almost all Federal agencies and departments. One of the basic delivery mechanisms that FEMA has is the National Fire Academy. It is located in Emmitsburg, Md., in the National Emergency Training Center. Some time ago NETC outgrew its campus there. Each year, we see hundreds of prospective students being turned away from potentially benefitting from the programs offered at the Fire Academy.

In recognition of this, FEMA has located a new site in Carson City, Nev. We believe that this is an essential addition to the facilities that are available to the Fire Academy, and NFPA strongly supports the funds necessary to acquire the site and put the system in place there.

NFPA also vigorously supports FEMA's request for an additional $2.5 million that will be earmarked for expanding the application of the quick-response sprinkler system technology which, incidentally, was developed by FEMA. This technology holds the promise of installing a protective, lifesaving suppression system in those buildings where the majority of people die in this country every year, and that is the American home.

NFPA also supports the request for an additional $1 million for the community volunteer fire prevention program. This program is one of the things that I believe is a hallmark of good federal systems; that is, it is developing a leadership, a merger of the leadership between the Federal, State, local governments, and the private sector. It is using all of those resources together to help reduce the fire problem in this country.

Basically, the Fire Administration and the Fire Academy are two of the most cost effective programs in the Federal Government. They traditionally delivered to the American people more benefit per dollar than almost any other program you can find, and I appreciate the opportunity to be here today and answer any questions that you might have. We have submitted an expanded statement for the record, sir.

Senator LEAHY. I understand that. It will be part of the record. I, looking at that and what we have here, there is, if you have additional information on the request for reallocation of the $7.5 million, if there is any additional information beyond the statement, that can be given to the subcommittee staff.

Mr. GERARD. Yes, sir. It is in the expanded statement.

Senator LEAHY. Good.

On the issue of NETC West, I am advised we are waiting for a cost-benefit report from FEMA, but Chairman Garn has asked for it to identify the implications of all the alternatives. I think all of us want to see that when we try to figure out where we go with this.

We would particularly like to see what courses can be conducted in the States and what should be given at a National Training Center. Coming from a small rural State as I do, I realize there is only so much that we can do within our States, but we have certain things that are very unique to a small rural State. We have, maybe, two or three small cities, they are all cities with fire stations, hydrants, and so on. Our major problem is, How do you get through when there has been 10 inches of snow that night down a back road and have to get your water out of a stream. For somebody from southern Florida, this may not seem like a major issue to the person in Vermont who, at 10 below zero, is trying to hack through the ice in that stream to get the water out.

I think we are blessed in our State with some extraordinarily good fire departments, most of which are volunteer, and most of whom raise their own money for their own training and do it on their own time. They are certainly not getting paid for it.

As a matter of fact, it is money out of their own pocket. I want to make sure we are giving them adequate training within their State, but I also want to make sure that at the national level, that we have those things available to be doing that, chemicals, and a whole lot of other things.

I am interested in the testimony. I am delighted that you are here. I think you will find that each of us, whether we have predominantly urban States or rural States, understands the problems. When somebody has a major fire at 2 o'clock in the morning, which is when those things usually are, you are not asking whether you are in a rural State or a rural area, an urban area, a wealthy area, a poor area; you just know that somebody has got to respond.

Mr. GERARD. Yes, sir. That is one of the joys of the Fire Service. No one checks to see if you have insurance.

Senator LEAHY. Never have in Vermont, and I suspect that is true with the other 49 States.

Mr. GERARD. Yes, sir?

Mr. MCCORMACK. Senator, I think one of the points in the NETC in the West as it relates to the funding this year, one of the very serious concerns that we have is that the increased funding go to the existing national Fire Academy funding program. If NETC West is, in fact, materialized, that it be from separate funding whether it be from FEMA's budget or overall or whatever. We know the problem that Judge Gibbey and Walter Reed have in States such as Vermont. You probably get four weekend programs a year in the State of Vermont.

There are also new packages that have been put on line at the Academy. We are hoping that with some increased dollars they can get out and get probably six or eight into the States because they are of no cost to the State; they just go in and bring in instructors.

Senator LEAHY. And I think—I don't want to be parochial in this, but I'm sure Senator Garn could say the same thing about rural Utah—is that when you get there, I think it should be a matter of some satisfaction to those who go up to put on those programs to see the kind of response they get. I know that a lot of people turn out, and a lot of people work awfully hard on that.

Thank you very much. Yes, sir?

Mr. MCCORMACK. Senator, if we could, one other message. If we could try and get it across, we appreciate you people last year saving the U.S. Fire Administration when the administration tried to zero fund it. They are back at it again this year with the Center for Fire Research and also with the Rural Fire Act. I think the Rural Fire Act is probably something that is of utmost concern to you. We are going to be looking for some help on the Cigarette Safety Act. We could use the help of the Appropriations Committee and all of Congress to send the word back to the White House to stop tampering with the fire programs. We need them.

Senator LEAHY. Well, the White House is fine, but on occasion, I disagree with them on a few things, and I think sometimes you have people sitting down figuring out charts and numbers and all, and they tend to forget that there are actually real programs in there that involve people. I would like for them to come to one of these bake sales and other fund raisers that most volunteer fire departments, whether its Vermont, California, Utah, or anywhere else, use to raise money just to protect the people in their own community and go and chat with them about the numbers. They may get a different view.

Mr. GERARD. Yes, sir.

Mr. MCCORMACK. Thank you.

Senator LEAHY. Thank you.

[The statements follow:]

STATEMENT OF EDWARD H. MCCORMACK, JR., EXECUTIVE DIRECTOR, INTERNATIONAL SOCIETY OF FIRE SERVICE INSTRUCTORS

Mr. Chairman, my name is Edward H. McCormack, Jr. of Hopkinton, Massachusetts. I am the former Chief of Fire Training and Director of the Massachusetts Firefighting Academy and, since 1977, have been the full-time Executive Director of the International Society of Fire Service Instructors (ISFSI) with its headquarters in Ashland, Massachusetts. I submit this testimony on behalf of the 6,000 members of ISFSI located in every state in the Union.

I appreciate the opportunity to present testimony in support of the Fiscal Year 1985 appropriations for the Federal Emergency Management Agency, United States Fire Administration, and the National Fire Academy. The ISFSI has long advocated a federal fire focus to support and not supplant existing state and local fire prevention and control efforts.

ISFSI was one of the first fire service organizations to advocate the transfer of the federal fire program from the U.S. Department of Commerce to the then proposed Federal Emergency Management Agency. Today, we continue our support of the fire programs in FEMA as we feel that these programs within FEMA are most cost-effective.

The FEMA-fire linkage makes sense, and the Director of FEMA and Associate Director for Training and Fire Programs have worked hard to return a separate and distinct identity for the fire programs while making fire an integral part of a comprehensive emergency management agency. The leadership initiative has also resulted in expanded visibility for the fire service in the total emergency management spectrum.

It is for this reason that ISFSI supports the total FEMA budget of $92 million for FEMA operations and urges the Appropriations Committee to keep the $92 million within FEMA. Yes, examine each program closely, but if programs are not worthy of increases, make the funds available to programs in the area of training and education which provide a greater return on the investment.

United States Fire Administration

We realize the Administration tried to eliminate the United States Fire Administration (USFA) only one short year ago. Fortunately, the Fire Service and Congress prevailed, and today we have a leaner, revitalized and more cost-effective Fire Administration providing much needed programs for the Fire Service and citizens of America.

On May 4, 1973, the National Commission on Fire Prevention and Control released its report, the document entitled America Burning. The Commission stated emphatically that "what is not needed is a Federal bureaucracy assuming responsibilities that should be retained by state and local jurisdictions. Fire prevention, fire suppression, and public education on fire safety should remain primarily responsibilities of local governments, where familiarity exists with local conditions and the people being served. Communities have already invested heavily in manpower and equipment for fire protection, in recognition that it is a local responsibility. Likewise, regulatory responsibilities for fire prevention and code enforcement should remain at state and local levels. Codes and regulations must respond to changes in the built environment, and past experience illustrates that state and local governments are likely to be more dynamic and responsive to changing needs for different jurisdictions than a single Federal regulatory agency.

The Federal Government can help, however, in being a national advocate of fire protection and in providing better training and financial assistance so that state and local governments and private enterprise can more effectively reduce deaths, injuries, and property losses from fire. Paramount among the objectives is to assist local fire services to improve their effectiveness and broaden their responsibilities from primarily fire suppression to a 'fire loss management' orientation designed to prevent fires from happening and reducing their consequences when they occur."

It is clear, the Federal Fire Prevention and Control Act intends that the USFA should support, not supplant, the efforts of other fire-related agencies at the local, state, and national levels. Established and effective programs of both the private and public sectors should be utilized and not duplicated. Maximum utilization of existing resources can be both cost-effective and efficient in combating the national fire problem.

In our opinion, during the past year, the USFA made some progress towards achieving these goals. While others appearing before thes Committee may feel different, ISFSI supports the following FY'85 request and submits additional request for programs which conform to the intent of America Burning.

(1) Support the agency's request for an additional $2.5 million for a national, Residential Sprinkler Program.

(2) Support an additional $1 million for a total of $2 million to be earmarked to the Community Volunteer Fire Prevention Program in FY'85.

(3) Support an increase of $750,000 for Firefighter Health and Safety to accomplish a long term occupational disease study, nutritional counciling, and toxicity protocols.

(4) That an additional $1.5 million be appropriated to be used for innovative and direct grants to states in support of anti-arson and Fire Prevention Community Volunteer Programs.

(5) That an additional $1 million be appropriated and set aside for use only in conjunction with one-for-one contributors from the private sector. This would truly implement private/public partnerships.

It is recommended that this increase of $6,750 million be from within the existing FEMA budget request, but allocated for these specific fire programs. It is further recommended that these be program or discretionary dollars for projects to be accomplished under contract or cooperative agreement and administered by the existing FTE's.

National Fire Academy

In our opinion, the National Fire Academy (NFA) is providing quality educational offerings in both the field and resident mode. However, the number of program offerings must be increased and then availability expanded.

In a twelve-month period, the National Emergency Training Center (NETC) in Emmitsburg, Maryland, provides an educational setting for 8,991 students from all elements of the emergency services. While 5,814 of the students are in study at the National Fire Academy, the number of slots available each year for fire service personnel is still inadequate. If training and education is to be the vehicle through which change occurs in the fire service, the number of allocated slots for fire service personnel must be more than doubled.

For this purpose, ISFSI supports FEMA's plan for the establishment of an NETC West with the provision that it be funded with separate new monies and that no existing allocated dollars or positions of the National Fire Academy or United States Fire Administration, regardless of to whom now assigned, be used in the development, administration, or operation of NETC West.

NETC West must only support and not supplant the National Fire Academy in Emmitsburg, Maryland, and the courses offered at NETC West must be prerequisite-type courses which will prepare and feed students into high level-type academic courses at the National Fire Academy in Emmitsburg, Maryland.

Additional monies already requested for the National Fire Academy in FY'85 ($2.704 million) should be used to expand existing National Fire Academy resident and field programs and provide additional personnel (FTE's) to handle the increased educational offerings.

Summary

America Burning, the official report of the National Commission on Fire Prevention and Control, a decade ago, suggested a course of action and recommended a progressive but modest financial commitment to attack the

Nation's fire problem. While progress has occurred during the decade, it was not in the magnitude projected for a lack of dollars.

While today's request for increased dollars may seem costly to some, the request nowhere near approximates the request of a decade ago. However, for the existing fire programs to grow in effectiveness, financial increases are also necessary.

In this vein, ISFSI would like to communicate to the full Senate and House Appropriations Committees the fact that our existing federal fire programs, be they in FEMA, Commerce, HUD or Agriculture, are essential for the dimunition of fire in America. We encourage Congress to strongly communicate to the Administration this displeasure with the Administration's continual attempts to zero fund, discontinue, or phase out any of the existing federal fire programs.

Thank you, Mr. Chairman.

STATEMENT OF JOHN C. GERARD, WASHINGTON REPRESENTATIVE, NATIONAL FIRE PROTECTION ASSOCIATION

The National Fire Protection Association (NFPA), founded in 1896, is a non-profit, technical and educational membership organization. It has remained the principal public advocate for fire safety since its inception. The Association's membership of over 32,000 is drawn from the many disciplines involved in and concerned about the national fire problem. NFPA is not a trade or industry association. No one group or interest is dominant. The only common membership denominator is a concern about fire safety. Members include fire service personnel; fire marshals; electrical inspectors and city managers; architects, engineers and educators; health care facility operators; and similar groups from commerce, industry, insurance; as well as federal, state and local governments. The NFPA is a founding member of the Joint Council of National Fire Service Organizations (JCNFSO).

One of the principal functions of NFPA is the development of more than 200 consensus codes and standards related to fire protection. Some of the codes include the Life Safety Code, the National Electrical Code and the National Fuel Gas Code. Typical of the subjects covered by our standards are flammable liquids, sprinkler systems and the installation of other fire protection equipment. We also develop standards used for fire apparatus, firefighter safety and professional qualifications. NFPA has many other functions including public education, technical advisory services, research and development, as well as data collection and analysis.

Since its inception in 1896, NFPA has been a consistent and often outspoken public advocate for fire safety. In this role, the Assocation was an active participant in the National Commission on Fire Prevention and Control. That Commission investigated and identified the fire problem in the United States and made a series of recommendations which we have continuously supported. Two of those recommendations, enacted in 1974, continue to serve this country in an exemplary fashion. They are the United States Fire Administration and the National Fire Academy.

The NFPA has closely monitored the work of these two activities and has provided constructive testimony at authorization and appropriation hearings regarding their accomplishments. Working together they have provided the catalyst and leadership to assist state and local governments, as well as the private sector, in increasingly effective efforts to solve our Nation's fire problem.

Consistent with our dedication to reducing the human and economic losses caused by fire, we have a vital concern over the funding available through the Federal Emergency Management Agency (FEMA) for the United States Fire Administration and the National Fire Academy. We support, as recommended by General Louis O. Giuffrida, that additional funding be provided to maintain an effective Federal focus on fire.

The National Emergency Training Center (NETC) long ago outgrew its campus in Emmitsburg, MD. In recognition of this, FEMA has located a second site in Carson City, Nevada. This is an essential addition to the facilities available for training the people who in fact mitigate emergencies in this country. NFPA strongly supports this initiative and recommends that Congress appropriate the $3,165,000 needed to occupy the Western site and the $1,771,000 necessary to establish the training programs there. The management of FEMA has assured NFPA that activating NETC-West will not adversely affect the programs at the National Fire Academy in Emmitsburg.

NFPA is encouraged by the evolution in course offerings at the NFA and strongly urges approval of the $1,204,000 which will enable the Academy to offer an additional 203 courses to 8,000 students in the field.

NFPA strongly supports FEMA's request for $2,520,000 to enable the USFA to begin work on a national residential sprinkler program that will be consistent with state-of-the-art technology and current good engineering practices. This program will operate in conjunction with the private sector with the goal of a fire safe American home. We are also supportive of the request for an additional $1 million for the Community Volunteer Fire Prevention Program. These programs develop a merger of leadership between Federal, state and local governments and the private sector. They follow in the footsteps and tradition of those FEMA Smoke Detector programs that have helped reduce the life loss due to fire in the United States by 20-25% over the past 10 years.

Finally, we wish to commend General Giuffrida and his staff for their work in establishing the Integrated Emergency Management System (IEMS) so as to bring about a coordinated, predictable and effective response to any emergency regardless of its nature. Such a system is the very core of effective emergency management. FEMA's budget must reflect the additional funds necessary to implement this concept.

In summary, the NFPA supports the addition to FEMA's budget of $3,165,000 to occupy the site for NETC West and $1,771,000 to establish the program there. We suppport the $2,520,000 for a residential sprinkler program, $1 million for the Community Volunteer Fire Prevention Program and an additional $1,204,000 for the NFA field courses.

The HUD-Independent Agencies Subcommittee, Senate Appropriations Committee, can rest assured that the USFA and the NFA are exemplary Federal programs. The ratio of results achieved to dollars spent is truly impressive and is an example for all agencies and departments.

NATIONAL SCIENCE FOUNDATION

STATEMENT OF DR. MICHAEL S. PALLAK, PH.D., EXECUTIVE DIRECTOR, AMERICAN PSYCHOLOGICAL ASSOCIATION, ON BEHALF OF THE ASSOCIATION FOR THE ADVANCEMENT OF PSYCHOLOGY

Senator LEAHY. The last witness this morning is Dr. Michael Pallak, who is executive director of the American Psychological Association, and on behalf of the Association for the Advancement of Psychology.

Mr. PALLAK. Thank you, Senator. It is a pleasure to be before this subcommittee once again.

In particular, our comments this year concern the NSF budget. Before commenting on the National Science Foundation budget request for fiscal year 1985, we feel it might be useful to describe the kinds of research in which psychologists and other behavioral scientists are engaged. Their activities form an impressive array of inquiry that ranges from purely psychological phenomena to purely behavioral phenomena and include such diverse topics as normal and abnormal brain growth and development, education processes such as learning and memory, the study and design of organizational structures and functions, the study of social institutions and interactions, personnel selections, et cetera.

Our research has implications for problems of health care, productivity, education, substance abuse, human factors in technology, and so on.

In the last 5 years, contributions in these areas have been recognized through two Nobel prizes to two members of our association and many other national and international awards to distinguished psychologists and behavioral scientists.

We are pleased that the request for NSF's research efforts as a whole represents more than a 14 percent increase over fiscal year 1984. This is in keeping with the administration's effort to reinforce the Federal role in basic research, a policy we think deserves strong congressional support. However, within the NSF Directorate of Biological, Behavioral, and Social Sciences, the alarming pattern of lowered funding for many programs, to cognitive science programs; social and developmental psychology and psychobiology are merely meeting inflation.

Senator, this caps a 5-year trend of what we think is second-class funding for those sciences at NSF. Even with the restorations consistently made by Congress in previous years, the trend continues. In terms of constant dollars, NSF's behavioral science programs have experienced decreases of up to 50 percent in some areas between fiscal year 1980 and fiscal year 1985.

This has occurred in a period when other Directorates at NSF have increased dramatically, as much as 24 to 39 percent over this same period of time.

In this year, only two areas, large socioeconomic data bases in the social and economic sciences and instrumentation in the neuroscience program have been proposed for significant increases in the fiscal year 1985 budget. Initiatives for data bases and for instrumentation are, indeed, worthy of this subcommittee's support.

But they also represent a very narrow view of behavioral and social science research, a view that ignores the need to encourage investigator initiated research programs, the backbone of any basic research, whether it's in behavioral and social sciences or whether it's in the so-called physical or hard sciences or the neuroscience areas. The study of human behavior, Senator, extends beyond the collection of demographic information and depends on resources beyond scientific equipment.

In addition to directly damaging NSF's behavioral and social science research programs, we think the fiscal year 1985 budget request jeopardizes larger problems and potential solutions and contributions by the behavioral and social science community.

Without going into detail and quoting, I simply would call your attention to the statement made by Dr. Anna Harrison, president of the American Association for the Advancement of Science, who raised the question of the adequacy of the national investment in behavioral and social science research during recent NSF authorization hearings in the House.

In the version submitted for the record, there is a fairly extensive quotation from her testimony. In recent years, because no NSF authorizations have been enacted, this committee has had responsibility for setting NSF priorities as well as for determining annual NSF appropriations. Once again, it seems likely that no authorizing law will emerge, but we urge you to be guided by the deliberation in the House where an additional $5 million was approved to the BBS Directorate, approximately $3.6 for individually initiated director research programs in the behavioral and social science areas, and $1.4 million for the information sciences.

It is a small amount compared to the budgets of the other Directorates.

I wish to emphasize the great difference in the vitality, vigor, and progress that enhance contribution of the behavioral sciences that such an obligation would make to enable social sciences.

In addition, as many groups come before you and make a case for increased funding or increased funding of line items, I did want to touch on science education. We were concerned that this year's budget request for NSF, Senator, does not renew the $5 million set-aside for teaching and learning research that was appropriated in last year's budget.

Senator LEAHY. I was told to see your testimony on that. I believe earlier this morning it was mentioned, perhaps by Senator Abdnor, that they are going to cap the review of the need for the incremental funding. I think the chances are good that the scientific set-aside will be retained. I think there is support for it on both sides of the aisle. I have not talked with Senator Garn yet, so I can't speak for him, but I think that there is some pretty good support for it. I think it is good that you have included it in your testimony——

Mr. PALLAK. That is very good news.

Senator LEAHY [continuing]. And have it in your recommendation. There is some good news on a rainy day.

Mr. PALLAK. I did want to emphasize for the record, because I'm not sure everybody understands, that if it had not been for this subcommittee, and certainly Senator Garn's efforts, in particular, it would never have existed. We were somewhat surprised not to see it included in this year's budget. So anything that we can do to aid your efforts, by all means, I want to do.

Senator LEAHY. This year's budget is still a little bit of a moving target. It is not in stone yet.

Mr. PALLAK. Senator, your reputation for humor is indeed deserved. That pretty much concludes the sense of my testimony. I would be happy to answer questions. I know you have a timetable to keep to also.

Senator LEAHY. I do, and I think we have everything here, but what I am going to do is leave this part of the record open in case anybody does have further questions. I think at this point, we will just recess until 1:30, when we will continue to hear testimony from the public witnesses.

Doctor, I'm glad you are here. You made a good statement, and you may walk home with a few bucks. [Laughter.]

Mr. PALLAK. Thank you.

[The statement follows:]

STATEMENT OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION AND THE ASSOCIATION FOR THE ADVANCEMENT OF PSYCHOLOGY

The American Psychological Association and the Association for the Advancement of Psychology make the following points concerning the NSF budget for FY 85:

- o Despite requested increases for socioeconomic data bases and neuroscience instrumentation, the proposed Fiscal Year 1985 budget for the National Science Foundation (NSF) presents a hardship for most of NSF's behavioral and social science research programs. This is the latest in a series of disproportionately low budget requests for these programs. Congress has consistently rejected these requests in both authorizing and appropriating legislation.

- o We urge the Subcommittee to concur in the $5 million addition for behavioral and social science research as contained in H.R. 4974, which was approved by the House of Representatives on April 25. This would improve funding for individually-initiated research projects in these sciences and would strengthen programs that otherwise will continue to languish as the result of inequitable budget distributions.

- o We also urge the Subcommittee to renew the $5 million set-aside for teaching and learning research that was contained in the FY 84 budget for NSF but was not included in the budget request for FY 85.

Mr. Chairman, members of the Subcommittee, thank you for the opportunity to testify on the subject of the National Science Foundation's Appropriations for Fiscal Year 1985. This statement is made on behalf of the more than 72,000 members of the APA and of our sister organization, the Association for the Advancement of Psychology.

Before commenting on the NSF budget request for FY 85, we feel it would be useful to describe the kinds of research in which psychologists engage as behavioral and social science researchers. Their activities form an impressive array of inquiry that ranges from purely physiological phenomena to purely social phenomena and includes such diverse topics as normal and abnormal brain growth and development; educational processes such as learning and memory; the study and design of organizational structures and functions; the study of social institutions and interactions; personnel selection and placement; cockpit design and instrument panel layout, based on research in visual perception; survey research; and developing standardized tests for use in education and the business sector. Psychologists' research has implications for problems of health care, productivity, education, substance abuse, and human factors in technology, just to name a few. In the last five years, contributions in these areas have been recognized through two Nobel prizes and many other national and international awards to distinguished psychologists.

These research areas illustrate some of the many fields that constitute the broad category of behavioral and social science research. As a category, however, these sciences also have been a target in each of the Administration's budget requests over the past four years. The Fiscal Year 1985 request for NSF's behavioral and social science research programs is no exception to this trend.

We are pleased that the request for NSF's research activities as a whole represents more than a 14% increase over FY 84. This is in keeping with the Administration's effort to reinforce the federal role in basic research, a policy deserving strong Congressional support. However, within NSF's Directorate for Biological, Behavioral and Social Sciences (BBS), the alarming pattern of lowered funding for many programs continues. For example, the cognitive science program, social and developmental psychology, and psychobiology are all proposed for budgets that will barely meet inflation. This caps a five year trend of second-class funding for these sciences at NSF. Even with the restorations made by Congress in previous years, the trend continues. In terms of constant dollars, NSF's behavioral and social science programs have experienced a decrease of up to 50% in some areas between FY 80 and FY 85. This has occurred while other directorates at NSF have increased dramatically, as much as 24% to 39% over the same time period.

Only two areas -- large socioeconomic data bases in the social and economic sciences division and instrumentation in the neuroscience program -- have been proposed for significant increases in the FY 85 budget request. There is nothing more worthy of this Subcommittee's support than these budget initiatives for data bases and instrumentation. But they also represent a dangerously narrow view of behavioral and social science research that ignores the need to encourage broader individual investigations -- the backbone of basic research in the behavioral and social sciences. The study of human behavior extends beyond the collection of demographic information and depends on resources beyond scientific equipment.

In addition to directly damaging NSF's behavioral and social science research programs, the FY 85 budget request jeopardizes larger problems whose solutions depend in part on behavioral and social science research. Improving the human condition requires more than any single area of science can provide. This point was made recently by Dr. Anna Harrison, president of the American Association for the Advancement of Science, who raised "the question of the adequacy of the national investment" in behavioral and social science research during NSF authorization hearings in the House. In her testimony, Dr. Harrison pointed to the important role of these areas of research in addressing the complex problems and issues confronting society:

> Parallel approaches to the solution of problems and the resolution of societal issues involve and utilize behavioral, social, political and economic phenomena. Societal issues ... are only very remotely related to physical phenomena and the resolution of such issues is not to be found in the utilization of physical phenomena. Even the resolution of issues, such as waste disposal, which do involve physical, chemical and biological phenomena are dependent upon the resolution of a host of behavioral, social, economic and political problems as well as the development of technological options involving physical and biological phenomena.

In recent years, because no NSF authorizations have been enacted, this Subcommittee has had special responsibility for setting NSF priorities as well as for determining annual appropriations. Once again, it is likely that no authorizing law will emerge. But we urge you to be guided by the deliberations of your colleagues in the House, where an additional $5 million was approved for the BBS Directorate: $3.6 million for individually-initiated projects in behavioral and social science research, and $1.4 million for information sciences. This is a small amount compared to the budgets of other Directorates, yet it would make a great difference in the vitality and effectiveness of programs that otherwise would languish.

SCIENCE EDUCATION

Our other major area of concern in the NSF budget involves the Science and Engineering Education (SEE) Directorate. Specifically, we are concerned that this year's budget request for NSF does not renew a $5 million set-aside for teaching and learning research that was appropriated in last year's budget.

Psychologists share the concern that improvement is needed in our nation's science education activities. We believe this is necessary for the U.S to remain competitive with other countries in our own industries and other areas where innovation is needed. Economic productivity will continue to falter without better science education. Equally important is the need to improve our nation's scientific understanding of problems in health, the environment, and society.

Each of these points is underscored by our need to adjust to the increasing presence of "high technology" in our daily lives. As Congress and the Administration promote the development of innovative technology, it is important that educational policies be in place to prepare for the future. There must be adequate research on the best ways in which science can be taught and learned so that we can maintain our commitment to the next generation of producers and consumers of high technology.

Psychologists and others involved in education-related research have made significant strides toward establishing a knowledge base on the processes of learning, cognition, and teaching in general, and specifically, in understanding the ways in which science and mathematics are most effectively taught. For example, cognitive researchers have analyzed the ways experts approach a problem to discover possible shortcuts to acquiring the skills possessed by high-quality scientists.

There have also been advances in research to develop instructional methods designed to encourage interest in science and mathematics in children. It is important that a child who has mastered basic mathematical operations is not discouraged when asked to compute more complex problems that require additional operations and understanding. However, current methods of teaching science and mathematics may exclude all but a small number of students from developing a higher degree of literacy in science and mathematics. This has implications for increasing public understanding of science and math as well as for the quantity and quality of teachers and researchers in these areas. We are concerned that without a specific set-aside at NSF, funds may be diverted away from these kinds of research in the FY 85 budget.

There are proposals (H.R. 1310/S. 1285) on both sides of the Capitol that would reduce the crisis in science education and establish a national policy for the future. Both initiatives include research as an element in the effort to improve science education. Given these signals, we urge this Subcommittee to renew the $5 million set-aside and prevent an interruption in the momentum of the teaching and learning research enterprise at NSF.

CONCLUSION

This concludes our presentation of APA's views on the FY 85 budget for the National Science Foundation. Again, thank you for the opportunity to testify on these important issues. To reiterate, we urge this Subcommittee to consider and approve the following proposals:

- An addition of $5 million to the FY 85 budget for the Biological, Behavioral and Social Sciences Directorate of NSF, as approved by the House; and

- Renewal in the FY 85 budget of the $5 million set-aside for teaching and learning research that was contained in the FY 84 budget for the Science and Engineering Education Directorate.

Your consideration of these proposals is particularly important. The absence of authorizing legislation creates increased responsibility for the Appropriations Committee with regard to the NSF budget. Please do not hesitate to call on us if we can be of further assistance during your deliberations on these matters.

ADDITIONAL PREPARED STATEMENTS

[CLERK'S NOTE: The statements of Keith W. Mielke for the Children's TV Workshop and Saul K. Fenster for the New Jersey Institute of Technology for the record follow:]

STATEMENT OF KEITH W. MIELKE, VICE PRESIDENT FOR RESEARCH, CHILDREN'S TELEVISION WORKSHOP

Thank you for the opportunity to appear before you today. I am here to urge this Subcommittee and the Congress to appropriate an adequate level of funds for fiscal year 1985, to enable the National Science Foundation to continue its vital support of science education.

Children's Television Workshop has a direct interest in these appropriations since the National Science Foundation has provided significant funds for two seasons of 3-2-1 CONTACT, an educational television series designed to make science more understandable and appealing to millions of 8-to-12 year-olds.

The National Science Foundation has also recently made a long-term commitment for partial support of 3-2-1 CONTACT over the next five years. This commitment provides almost a third of the funding necessary to produce 20 new programs in each of the next five years. We will be seeking additional funds to make this programming a reality from the Department of Education and the Corporation for Public Broadcasting. Both of these agencies have provided funding for 3-2-1 CONTACT in the past.

Our goal is to produce these additional 3-2-1 CONTACT programs in order to build a library of science education for children that can be used for many years to come for both at-home and in-school viewing.

In the early seventies we built just such a library with our educational series on reading, THE ELECTRIC COMPANY — which remains the most widely used in-school television program in schools after six-years of repeat broadcasts. We produced 130 shows of THE ELECTRIC COMPANY each season, compared to the 20 3-2-1 CONTACT shows possible at the levels of funding currently available. This, we feel, is the bare minimum necessary to make any headway toward a long term library.

Each year it becomes more obvious that America's future industrial leadership will increasingly depend on science and technology, and fortunately we have a good start in attracting youngsters to watch 3-2-1 CONTACT. The second season of the series aired on public television stations throughout the country in the fall of 1983. These 40 new shows reached more than 16 million homes. In terms of target audience, Nielsen statistics on viewing by 6-to-11 year-olds show that Season II exceeded the 6th repeat of Season I by 57%, and the initial run of Season I by 13%, reaching more than 4 million homes. This shows that we are building audience momentum for the series that we are eager to build on with our new programs.

With audiences of this magnitude, 3-2-1 CONTACT, like our other shows, is extremely cost-effective. With repeat airings, 3-2-1 CONTACT costs only one penny per-person per-viewing. In these times that is a real educational bargain.

Children's Television Workshop works hard to ensure that 3-2-1 CONTACT has an impact beyond the screen. Teachers Guides are provided and teacher training workshops conducted around the country. Over 650,000 copies of the Teachers Guide have been distributed so far. Strong participatory activities are taking place with a variety of organizations such as science museums and the Girl Scouts of America. Science clubs for children based on the series are also in effect.

The strong long-term support of the National Science Foundation gives us a solid beginning from which to complete our on-going funding requirements for 3-2-1 CONTACT, and thus to continue to help meet the needs of children's science education.

Children's Television Workshop has heard, and listened to, the national concern about the state of math education in this country. We are right now seeking funding to begin a major new math series for 8-to-12 year-olds. The first season of this new series will be 65 half-hour programs to be broadcast daily on PBS stations. With 3-2-1 CONTACT, the math series will provide a daily hour of science and math education for elementary school age children, and will complement the daily hour of SESAME STREET for preschoolers.

The goal of the math series will be to supplement classroom instruction by motivating a lasting interest in math and providing children with practical problem-solving and related math skills which usually get short-shrift in schools. We will be seeking strong financial support from the Department of Education and also the National Science Foundation. We anticipate completing the budget with funds from the Corporation for Public Broadcasting, corporations and foundations. We know from our previous experiences, however, that we have to obtain the great bulk of the funding from Federal sources to make a major project of this nature come about.

Last year, three blue ribbon panels examined America's schools, particularily at the secondary level — and found them wanting — unable at present to provide the education needed by our children. These panels made many recommendations that if enacted would vastly improve our system of secondary and higher education in the coming decade. Acknowledged, but largely unexamined, is the fact that the quality of secondary and higher education depends importantly on the base provided by elementary education and what children learn before they go to school. Remediation at the secondary or collegiate level is a slow, costly process. Motivating and challenging children at the preschool and primary level is cost-effective and benefits both the child and the schools. While changing our nation's schools may take a decade or more, the effective and wise use of television can have major impact within a year or so.

The simple truth is that education occurs both inside and outside the classroom. The school is not an isolated provider of education. It can only work effectively in an environment which supports learning and achievement. The home is a key part of that equation. Television has become a vital and integral part of the home.

Children watch enormous amounts of television. The weekly viewing average among children aged 6-to-11 is twenty seven hours, totalling around one thousand, four hundred hours each year. Television that is designed to be both educational and entertaining can command children's attention, teach specific skills, and impart general knowledge.

New technologies hold promise of adding a pwerful means of providing an education — which Children's Television Workshop and other organizations are actively exploring. However, the excitment of new technologies should not cloud the fact that it will be a long time becore access will be effectively available to large numbers of children, especially including disadvantaged.

During this decade, and probably the next, broadcast television will remain the technology which can deliver quality education to mass audiences on a cost-effective basis. It works, and it is widely available to rich and poor alike.

As a nation, we have not committed ourselves to using broadcasting to support schoolroom learning and create a learning society that will help us to achieve the national goals that we all applaud.

The future of this country depends on a citizenry literate in science and math. Japan, and other nations, out-distance us in the teaching of their young in these crucial subjects. We'll pay dearly for this gap in the future if the trend continues.

Elementary school budgets are starving. And elementary school teachers, frequently without training in math or science themselves, often find these subjects as forbidding as their students do. Quality broadcast educational television can excite, motivate and teach students, teachers and parents alike — building the base for long-term competence and motivation of our young people before they turn-off on these subjects. If a child does not develop interest and confidence in the lower grades, it's almost certainly too late by the time high school is reached.

Commercial television, whether for children or adults, is designed to sell products; it can give scant attention to education. With Federal support, public television can help our teachers develop tomorrow's workforce — and even pioneers in science, technology and math. Measured in terms of national benefit, continued funding of quality educational television is no frill or luxury.

Federal funding is essential to ensure the production of programs such as 3-2-1 CONTACT and our proposed math series. The National Science Foundation stands as an essential funding source for these television efforts in science education, as a lead funder, and as strong support for math education.

Kid don't vote. They have no lobby. We should thoughtfully consider the consequences to our country if we develop a generation of children without the educational skills to compete in an ever-increasingly complex and competitive world. I know money is short — but so is time.

The NSF's science education program merits and needs your continued support.

STATEMENT OF SAUL K. FENSTER, PRESIDENT, NEW JERSEY INSTITUTE OF TECHNOLOGY, ON BEHALF OF THE AMERICAN ASSOCIATION OF STATE COLLEGES AND UNIVERSITIES

My name is Saul Fenster and I am President of The New Jersey Institute of Technology in Newark, New Jersey, a position I have held for the last six years. Prior to assuming the presidency of The New Jersey Institute of Technology I was Chairman of the Department of Mechanical Engineering, Associate Dean of Engineering, and Provost at Farleigh Dickinson University. I received a BME from City University of New York, an MS from Columbia University, and a Ph.D. from the University of Michigan. I am a member of the American Association for the Advancement of Science, American Society for Mechanical Engineering, and American Society for Engineering Education.

I am pleased to have the opportunity to testify on FY 1985 National Science Foundation appropriations with particular emphasis on science, mathematics, and technology education.

I represent the 358 member institutions of the American Association of State Colleges and Universities (AASCU), and am currently Vice Chairman of its Committee on Science and Technology.

With a combined enrollment of over 2-1/2 million students, the 358 state colleges and universities of AASCU enroll one out of five of all baccalaureate degree students in the country. Our institutions play a major role in our nation's science effort. Many students who ultimately pursue advanced degrees in scientific and technical fields receive their basic training at our institutions. A large portion of the nation's future elementary and secondary school science and mathematics teachers is educated at AASCU colleges and universities. These teachers must be able to communicate the knowledge and skills that will enable our youth to live in an increasingly complex and technology-dependent society. AASCU institutions award close to one-fifth of the B.S. degrees in engineering annually and over one-third of the B.S. degrees in computer and information sciences.

My testimony is also supported by American Council of Education (ACE), Association of American Universities (AAU), and National Association of State Universities, and Land-Grant Colleges (NASULGC). These associatons collectively include the over 3,000 degree granting American colleges and universities who will play a major role in the economic revitalization and technological advancement of this nation.

This is the third year that I have had the privilege and honor of presenting testimony to Congress on the National Science Foundation Appropriations and Authorizations. During this time we have seen encouraging new directions in funding for both the research and science education activities of the Education. This year the Administration's proposed budget for the National Science Foundation proposes an overall increase of close to 14 percent and, as Dr. Edward A. Knapp so accurately observed, "...this is outstanding news for all of us who care about the continued health of our Nation's scientific and engineering enterprise."

During the course of this past year, calls for increased spending for science and engineering education have been loud and clear. This has been in response to the growing realization that the investment in science education is an important one for the future economic strength, international competitiveness, and military security.

However, to date, the amount of this commitment has been insufficient. Indeed, the conclusions of the National Science Board's Coleman Commission report, "Educating Americans for the 21st Century" states: "The Nation that dramatically and boldly led the world into the age of technology is failing to provide its own children with the intellectual tools needed for the 21st century." Similar chilling conclusions were reached in reports by Secretary of Education Terrell H. Bell's Commission on Excellence in Education, the Education Commission of the States chaired by Governor James B. Hunt, Jr. of North Carolina, and the Carnegie Foundation for the Advancement of Teaching.

Legislation passed over a year ago by the House, H.R. 1310, Emergency Mathematics and Science Education Act, would have been an important first step towards a new Federal commitment and a revitalized role in science education. Unfortunately, the Senate still has not acted on this legislation. For this reason, this Subcommittee's role and decision in requesting additional appropriations for science education is of special significance.

There is much that can be regarded positively in the Administration's FY 1985 National Science Foundation budget request. We also commend recent actions of the House Science and Technology Committee in its recommendations for FY 1985 National Science Foundation spending contained in H.R. 4974. We are of the view that this Subcommittee should build upon these initiatives in approving FY 1985 National Science Foundation appropriations that will show your continued commitment to and support of national scientific and technological excellence.

I would like to comment on several aspects of the Administration's budget request:

- $10 million for a new program of centers for cross-disciplinary research in engineering;
- $23.8 million for a second group of 200 Presidential Young Investigators Awards and 200 continuations awards;
- $42.4 million to support research at predominantly undergraduate institutions; and
- $75.7 million for science education to support graduate research fellowships and precollege science and mathematics programs.

The newly proposed program of cross-disciplinary research in engineering is an important step towards insuring the continued health of the U.S. engineering enterprise. Concerns about the kind of training our undergraduate engineering students receive have been voiced in many quarters. Dr. George Keyworth, Director of the Office of Science and Technology Policy, noted at a AAAS Symposium that, "We're in the midst of a revolution in the way engineers work and the way modern industry operates. That revolution is putting potent new computer tools and capabilities in the hands of the product designer---and the revolution is blurring the distinctions between traditional disciplines. Unfortunately, very few of our universities are able to prepare their students to operate in that new environment." The proposed centers will address these concerns. As outlined by NSF, these centers will integrate research with the teaching of engineering practice to undergraduate and graduate students and provide the opportunity for close interaction with industry.

The request for continuation funds for the Presidential Young Investigator program, initiated in FY 1984, is of great significance. Last year, in the first round of awards, two faculty members at AASCU institutions were selected to receive support. We hope that the growth of this program in subsequent years will encourage promising young faculty at our institutions to remain in academic careers and, thus, further strengthen our education base in the sciences and engineering.

The increased support requested for research at primarily undergraduate institutions is one of the new initiatives that is of particular importance to the members of the American Association of State Colleges and Universities. Many scientists and engineers that go onto promising and illustrious careers begin their studies and research in primarily undergraduate institutions. Last year the Foundation recognized the importance of these institutions in the nation's total science effort by providing them with funds to deal with their unique set of problems. This year we are pleased that the Foundation has asked for an increase in the funds for this program. These funds are important vehicles for the strengthening of the bonds between research and education that exist at our nation's predominantly undergraduate institutions. The increased opportunities for both students and faculty to be involved with the latest scientific equipment and instrumentation and research techniques so vital to the training of our next generation of scientists and engineers will result from NSF's initiatives in this area.

I must now turn to an area in which I strongly urge the Subcommittee to take action beyond the Administration's recommendations. The $75.7 million requested by the Administration, and the $83.7 million authorized in H.R. 4794, would be used for graduate fellowships and pre-college science and mathematics education programs. These two areas are of vital importance to the future scientific education enterprise of the nation. I strongly endorse the efforts of the Foundation and the House Science and Technology Committee to support these activities.

However, additional emphasis and funds need to be provided for science eduation at the undergraduate collegiate level. Last year, AASCU along with a number of other educational associations, participated in the drafting of a document, "Higher Education's Agenda in Mathematics, Science and Technology Education." Implicit in the five pronged recommendations contained in that document was the assumption that America's postsecondary institutions have a major role to play in restoring our economic health and bolstering our national defense. Their resources should be directed to the most critical problems that beset the science education system so that adequate numbers of qualified mathematics and science school teachers will be trained; education for technology and science-related careers will be provided; the proper research environment, experience and tools to train the next generation of scientists, engineers, and researchers will be encouraged; and research to improve instruction and the education uses of information technology will be supported. At that time we urged Congress to enact legislation that would enable colleges and universities to further fulfill their mission as a vital force in solving the current science and technology education crisis.

Therefore, we are disappointed that this year, once again, the education budget proposed by the National Science Foundation omits any investment in undergraduate science, mathematics, or technology education programs. This absence of support for undergraduate science education programs is of contiruing concern to all of us. The interest in and support of the precollege and graduate programs must and should be maintained, but we urge you to supplement these initiatives with funds for undergraduate science education. Education is a continum from the precollege classroom to the graduate laboratory; we cannot ignore the middle stages in this educational link. I urge this Subcommittee to build upon the funding levels recommended in H.R. 4794 by recommending additional funds for a first step investment in undergraduate science education programs.

I would also like to take this opportunity to express my personal views in support of a program authorized in H.R. 4794: the Experimental Program to Stimulate Competitive Research (EPSCOR).

For three years, with a relatively small appropriation--approximately, $2.5 million annually---the EPSCOR program has sought to increase the capability of scientists and engineers in states that have been relatively less sucessful in competing for Federal R and D funds and to encourage a wider distribution of scientific talent and Federal funds. Over the three year period, this program has had dramatic results in improving the quality of the faculty involved and in increasing extramural research funds from Federal, state, and private organizations. This program has been important to many member institutions of the American Association of State Colleges and

Universities. Despite the achievements and sucess of the EPSCOR program, it is scheduled to end this year and is not included in NSF's budget request for FY 1985.

Recently the Honorable Ronnie G. Flippo testified before the House Science and Technology Committee and asked them to restore funding for the program. I agree with Representative Flippo's observation that the EPSCOR program is important because "...it enhances our total research base, improves undergraducate education in science in these locations, and provides better graduate education. It seems to me that in these times, when our nation is struggling to keep its leadership in science, high quality centers of excellence need to be encouraged in all areas of the country and scientific talents developed and used wherever they are available." I urge this Subcommittee to support the reauthorization of the EPSCOR program as recommended by the House Science and Technology Committee.

Thank you for giving me the opportunity to appear before this Subcommittee. I appreciate all the past efforts of the Subcommittee to insure our country's scientific health and I hope that you will continue to do so in the future. I will be happy to respond to any questions that you might have.

SUBCOMMITTEE RECESS

[Whereupon, at 11:50 a.m., the hearing was recessed, to reconvene at 1:30 p.m. the same day.]

(AFTERNOON SESSION, 1:30 P.M., TUESDAY, MAY 8, 1984)

NONDEPARTMENTAL WITNESSES

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

STATEMENT OF LEON HARPER, SPECIAL CONSULTANT TO THE AMERICAN ASSOCIATION OF RETIRED PERSONS

Senator GARN. The subcommittee will come to order.

The first witness was to be Mr. James M. Hacking, assistant legal counsel, American Association of Retired Persons.

What is your name, sir?

Mr. HARPER. Mr. Chairman, my name is Leon Harper, special consultant to the American Association of Retired Persons.

Senator GARN. Very good. Please proceed.

Mr. HARPER. Thank you.

The American Association of Retired Persons appreciates the opportunity to testify at this hearing on the fiscal year 1985 HUD-Independent Agencies Appropriations budget. The association's statement will focus primarily on elderly housing programs and I will present a general summary, but I ask that the entire text be included in the record.

Senator GARN. It will be.

Mr. HARPER. As you know, housing is the No. 1 expenditure for most older Americans. Many elderly persons spend at least one-third of their income for housing, and a large proportion spend substantially more, particularly low-income older persons who are unable to live in federally assisted housing.

The traditional rule of thumb is that housing should not exceed one-fourth of an individual's income. But according to a 1976 HUD survey, only about three out of five elderly households, or 59 percent, could live in adequate housing if they spent less than one-fourth of their income for housing. About 62 percent of older homeowners could live in adequate housing if they paid less than one-fourth of their income for housing.

These facts underscore the importance of federally assisted housing programs for older Americans, particularly for low- and low-moderate-income older persons.

One of the most effective programs is the section 202 housing for the elderly and handicapped. It has provided pleasant and affordable housing for older persons and frequently offers a wide array of services which enable elderly individuals to continue to live independently in a home environment, where the vast majority would prefer.

AARP recommends that there be sufficient lending authority in the 1985 HUD-Independent Agencies Act to continue the program at no less than its current operating level. We are opposed to the administration proposal to reduce the number of new section 202 units from 14,000 in 1984 to 10,000 in fiscal year 1985. It is absolutely essential to prevent any further reductions in this successful program because the stock of appropriate housing within the financial reach of the elderly is rapidly dwindling. Throughout the Nation, there are several prospective renters in virtually every community for every available section 202 unit.

A continuation of the program at 14,000 units is vital to prevent a further deterioration in housing conditions for older Americans.

We also urge that report language be included to continue the 9¼ percent interest cap on section 202 loans. Without this guarantee, many section 202 projects will simply be infeasible.

AARP further supports continuation of the congregate housing services program. A great need already exists for congregate housing because the 75-plus population is one of the fastest growing age groups in our society. This older elderly population is projected to grow by 51 percent from 1980 to 2005. That is more than four times the expected increases for individuals in the 65 to 74 age range.

This 75-plus population clearly runs a greater risk of becoming institutionalized than other age groups. However, these individuals can live independently in their own communities with appropriate services. The congregate housing services program can provide this broad array of services, which may include, in addition to congregate meals, homemaker or chore services, personal assistance, or other supportive services according to need.

For these reasons, AARP supports continuation of the program at the $6 million funding level recommended by the House Banking Subcommittee on Housing and Community Development.

The administration has proposed in its fiscal year 1985 budget to convert entirely the section 8 existing program to an expanded voucher system, based on the experimental voucher program created last year. AARP believes this proposal is unwise and short-sighted. While it is important to explore alternative methods for providing rental subsidies to low-income households, the results of such experiments should be fully evaluated before in-place programs are abandoned.

It has not yet been established that the new voucher program is a workable tool for meeting the housing needs of low-income persons.

Moreover, the administration's voucher program would adjust the subsidy amount only twice over a 5-year period, not annually, as under the current section 8 program. This places the assisted tennant at still greater disadvantages.

Finally, the savings claimed under the new voucher program derive primarily from the fact that the contract under the program runs only for 5 years, rather than for three 5-year terms—that is renewable—as under section 8. This maneuver creates the appearance of major cost savings but does nothing to alleviate the housing problem over the long term.

AARP supports the continuation of the section 8 existing program until a superior method is found to assist low-income persons in obtaining decent, affordable housing.

Finally, AARP urges the subcommittee to fund the senior environmental assistance program, which should be established on a permanent basis later this year. Both the House and Senate have passed legislation to create SEAP. Currently, the Environmental Protection Agency is funding a demonstration program which provides jobs for 2,000 persons 55 or older in diversified environmental activities.

AARP recommends that the subcommittee provide $10 million for the SEAP program as soon as this program becomes law.

The funding would not only provide new job opportunities for older Americans who are ready, willing, and able to work. Equally important, it would offer a constructive and cost-effective means to assure a cleaner, healthier, and safer environment.

We urge the subcommittee to adopt these recommendations, and I would be happy to answer any questions you may have in relation to them.

Senator GARN. Thank you for your testimony.

As you know, the subcommittee over the last 2 years has included additional funds for 202 funding. We would expect to do the same thing in fiscal year 1985, and in addition, the subcommittee does share your concerns about the housing voucher system being expanded until we have had a better opportunity to analyze the ramifications during the trial period.

Mr. HARPER. We have appreciated your support in the past. If there is any way we can help you toward these ends, I hope you call on us.

Senator GARN. Thank you very much.

Senator LEAHY. Thank you very much. Thank you.

Senator GARN. Is Mr. Samuel Simmons here? We are 3 minutes and 37 seconds ahead of schedule, and Simmons is not here. [Laughter.]

Dr. Sandra Newman?

Ms. NEWMAN. Yes.

Senator GARN. Good. We will let you jump ahead, then.

Ms. NEWMAN. OK.

STATEMENT OF MS. SANDRA J. NEWMAN, PH.D., JOHNS HOPKINS UNIVERSITY, ON BEHALF OF CONSORTIUM OF SOCIAL SCIENCE ASSOCIATIONS

Senator GARN. Dr. Sandra Newman, Johns Hopkins University, on behalf of the Consortium of Large Housing Association.

Ms. NEWMAN. No, no, on behalf of the Consortium of Social Science Associations.

Senator GARN. I am glad you corrected it. They printed it——

Ms. NEWMAN. Confused it?

Senator GARN. What has happened on the list is they have done it twice. There is a John Simmon——

Ms. NEWMAN. From New York City.

Senator GARN. From New York City, and his says Council of Large Public Housing and yours says Consortium of Large Public Housing. Whoever typed it was obsessed with large public housing. Please proceed.

Ms. NEWMAN. For the record, I am testifying on behalf of the Consortium of Social Science Associations, or COSSA, which represents over 175,000 social and behavioral scientists throughout the Nation. You will see attached to my testimony a list of affiliates and members of COSSA.

Thank you very much for the opportunity to testify today.

In its statement of justification for a fiscal year 1985 budget of $20.9 million, HUD's Office of Policy Development and Research modestly states that the $1.9 million increase this represents over their 1984 appropriation is needed to enable it to meet its research responsibilities.

My view is that a more sizable increase of $6 million, bringing the total appropriation to $25 million for fiscal year 1985, would allow us really only to begin to rebuild the pipeline of good ideas that are vital to improving or revamping current programs.

I would like to briefly review the three key reasons which I believe that this $6 million increase is vitally necessary.

First of all, the trend in appropriations to PD&R's since fiscal year 1981 suggests a potential crisis for the Department caused by the absence of information that is simply critical to its functioning. In nominal terms, PD&R's budget in each of the last 3 years has been just marginally more than one-third of what it was in fiscal year 1981. This year's budget, in real terms, is just about one-third of what it was in fiscal year 1981.

I think we would be hard pressed to find a private-sector firm that had roughly $15 billion in outlays and billions more in owned assets that devoted such a tiny share, one-tenth of 1 percent, to monitoring the efficiency and the effectiveness of its efforts and to restocking the cupboard of ideas to new approaches to accomplishing objectives.

The sharp reduction in research funding and, therefore, in research activities supported by the Department, has several implications: First of all, it means less recordkeeping by the Department that allows the office to monitor its programs; second, it means fewer evaluation studies that give us insights into how to do a particular job better than we have been doing it; and third, it means less policy development research, which simply advances the state of knowledge generally. I think it is particularly ironic that HUD's research budget has not been spared the austerity ax since this Department really offers several very clear examples of the economic payoffs to research for efficiency against both in the design of programs and in the management of programs.

Let me give you a few examples of these. Some applications of research to program design include findings from the experimental housing allowance program (EHAP), which helps significantly in designing the section 8 program. EHAP has combined with other PD&R research which directed our attention more to the existing stock of housing and away from so much reliance on new construction subsidies and programs, and in terms of management gains, we have used the annual housing survey to set fair market rent levels. We have made improvements in the performance funding system for public housing. We have improved income recertification programs for program participants.

These are just a few instances where PD&R supportive research has really helped the Department increase its management efficiency.

The second broad justification for increasing the appropriation is simply that high-priority research cannot be supported at current budget levels. When we review the PD&R budget request, it has to be remembered that of the $20.9 million, roughly half is immediately allocated to the American Housing Survey and other continuing and vital data series supported by the Department going to the Census Bureau, the SEC, the Federal Home Loan Bank Board, and other agencies that collect data for HUD, so that the dollars actually available for PD&R research is closer to $10 million.

I don't want to outline a comprehensive agenda of high-priority areas, but just let me give you a few examples to give you a sense of how much it is we really don't know about some very basic issues. First of all, the connections between public welfare and housing. It is estimated that about $5 billion of public assistance funds are spent each year on shelter allowances. This amount is almost as much as the amount that was spent by HUD in 1981 for housing assistance. Yet we have very little information, in fact, about the extent of overlap between subsidies coming from HHS for shelter allowances and subsidies coming out of HUD for housing assistance. We also don't know what proportion of welfare recipients live in substandard housing. Some ballpark estimates run as high as 30 to 50 percent, and what this means is that a sizable pool of taxpayer dollars are going to support inadequate housing.

To what extent does this result from inadequate shelter payment standards and welfare programs or to the lack of supply of adequate units? To what extent does this vary from time to place across the Nation? These are basic things we don't have the answer to. As you know, Congressman McKinney had proposed a demonstration and evaluation project to look at the inconsistencies and overlaps between these Federal benefit programs, and this initiative was not funded in fiscal year 1984.

I think because of the very substantial size of the expenditures on these domestic programs, we need to get the answers to some of these questions.

A second high priority area is the connection between housing and long-term care of the elderly. We all realize that demographic imperatives are going to require very carefully reasoned and designed approaches to meeting the housing needs of the elderly. I think one clear challenge to HUD in the future will be to respond to the dual requirements of adequate shelter plus support services that are essential for older people to live independenly in the community.

But again, as is the case with public assistance and housing assistance, there is also very little coordination and information about housing programs and long care programs. We just heard some information about the section 202 program. Certainly 202 and congregate housing services represent a movement in this direction, but they are unlikely to serve more than a minority of needy elderly households, and this leaves a serious gap in service converage.

The serious question is, really, how the large majority of needy households unserved by these programs are managing in the community. We need to know whether there are residential patterns; whether their individual residences are suitable for the cost efficient provision for long-term care services. I think since it is clear a continued public sector role will remain over time, we need information about how to structure subsidies and incentives to achieve cost efficiency in the linkage of these programs.

Despite the obvious urgency of this issue, the total fiscal year 1985 research budget proposed for the PD&R office that looks at elderly housing needs is only $150,000, and this represents a 25-percent reduction from fiscal year 1984.

Another high priority area is thinking about alternative targeting strategies for HUD assistance programs. We know that our resources are very limited and that we want to use them as efficiently as possible, targeted on people who have very serious needs. We have seen various proposals for altering the way programs are targeted. Some ideas include looking at the persistently poor, the permanently poor, rather than those who fall into poverty in only a single year. We know from some research that these people also are much more likely to live in inadequate housing units. But we don't know much about the practicality of this alternative or other alternatives to targeting HUD scarce resources.

We need to test such alternatives.

A final high-priority area is understanding the reasons for nonparticipation in HUD programs by some of the neediest households. Several research studies, including EHAP, indicated to us that only about a half of all eligible households actually participate in HUD programs. Further, when we look at the particpant profiles, we see that there may be some creaming going on because the average incomes of participants tend to be considerably higher than the minimum standard set for the programs. We don't know why eligible recipients, including those who may be most needy, are not participating.

This kind of research has been done for other important support programs like SSI and food stamps. It has never been done for housing assistance.

The third general justification for increasing PD&R's budget appropriation consists of a series of research management issues. First of all, under current budget constraints, PD&R is able to carry out congressionally mandated studies, but really, very little else. It has very little leeway for any kind of discretionary expenditures such as, for example, when an important issue arises that needs to be examined or when an outstanding unsolicited proposal is submitted to the Department.

Second of all, one of the arguments that has been heard again about the severe cuts in PD&R's budget is that there is greater efficiency associated with conducting research in-house or intramurally. I certainly believe that there is an important function to be served by intramural research, but I also believe that shifting the balance so substantially away from extramural research can raise some serious problems.

For one thing, it has turned out that in some instances, intramural research has a tendency toward not getting into the public domain. Since any Federal agency or government agency in general receives a host of free benefits from the reactions of the research community at large, once a study or a data base gets into the public domain, it is not only troublesome, but it is also not in the Government's self-interest for studies to be kept under wraps. We have a large number of regulations and rules that govern the publication of extramurally conducted research, but it seems that a different set of rules may guide the release of intramural research.

In addition to data release requirements, extramural research has another benefit because it is, by definition, independent research and independent examination of the question at hand. Charges of bias studies that have been contrived to support a particular point of view are much less likely to be attached to independent researcher's evaluation of an issue and so researchers have been chosen in an open competition that is based mainly on their merits.

Finally, at least at HUD, the arguement that in-house research has a faster startup time and that is why it is preferable is simply incorrect. Since about 1982, PD&R has had approximatley 10 indefinite quantity contracts, or IQC's, with universities and independent research organizations which were awarded as a result of an open competitive process. These IQC's had been created for the express purpose of being able to conduct quick turnover, high quality research.

Therefore, we know that a vehicle is already in place at PD&R for timely extramural research. These IQC's have rarely been used since they were awarded, and this is certainly, in part, because of severe budget constraints.

In closing, I would simply like to emphasize that over the last several years, I think that HUD has been able to draw on the capital of studies and of evaluations that were conceived in an earlier period. Without a substantial effort to restock the cupboard of ideas, I believe we are in great jeopardy of not being able to determine the effectiveness of our current initiatives or to evaluate the wisdom of proposed alternatives.

Senator GARN. Thank you very much, Dr. Newman.

Your comments concerning the need to develop a larger share of HUD's resources to research are well taken. I am sure you are aware of the budget problems we have. The subcommiteee has added funds, particularly the CIAP program last years, $4 million over what the House had had, so we are aware of the problem and certainly will take a close look this year to see if we can add some additional funds in this area.

Ms. NEWMAN. Thank you.

Senator GARN. Thank you.

[The statement follows:]

STATEMENT OF SANDRA J. NEWMAN, PH.D., ON BEHALF OF THE CONSORTIUM OF SOCIAL SCIENCE ASSOCIATIONS

Mr. Chairman and Members of the Committee:

My name is Sandra J. Newman. I am an Associate Professor in the Graduate Program in Public Policy Studies at the Johns Hopkins University. I am testifying today on behalf of the Consortium of Social Science Associations (COSSA) which represents over 175,000 social and behavioral scientists throughout the nation. A list of COSSA Members, Affiliates, and Contributors is attached to my testimony. I am pleased to have the opportunity to testify before you today.

In its statement of justification for an FY 1985 budget of $20.9 million, HUD's Office of Policy Development and Research (PD&R) modestly states that the $1.9 million increase this represents over the FY 1984 appropriation "...is needed to enable it to meet its research responsibilities" (1). My view is that even a more sizeable increase of $6 million (bringing the appropriation to $25 million) would allow us only to begin to rebuild the pipeline of good ideas that are vital to improving or revamping current programs. Let me briefly review the three key reasons why I believe this $6 million increase is necessary.

First, the trend in appropriations to PD&R since FY 1981 suggests a potential crisis for the Department caused by the absence of information that is crucial to its functioning. In nominal terms, PD&R's budget in each of the last three years has been just slightly more than one-third of what it was in FY 1981. This year's request of $20.9 million represents roughly 40 percent of the FY 1981 appropriation of $51.3 million. In real terms, this request is only about one-third of the FY 1981 amount (see Table 1). As my colleague noted during these hearings last year, one would be hardpressed to find a private sector firm with roughly $15 billion in outlays and billions more in owned assets that devotes such a tiny share -- just one-tenth of one percent -- to monitoring the efficiency and effectiveness of its efforts and to restocking the cupboard of ideas with new approaches to accomplishing objectives (2).

The sharp reduction in research funding and, therefore, research activity has several implications: less record keeping that allows the Department to monitor its programs, fewer evaluation studies, which provide insights into how to do a particular job better, and less policy development research, which advances the state of knowledge generally. It is particularly ironic that HUD's research budget has received the full force of the austerity ax since this Department offers many clear examples of the economic payoffs that PD&R-supported research has had for efficiency gains in both program design and management.

Some examples of the applications of research to program design include the Experimental Housing Allowance Program (EHAP), which helped significantly in designing the Section 8 Program, and EHAP combined with other PD&R research, which provided substantial hard evidence for the efficiency gains of shifting the balance in housing assistance programs away from major reliance on new construction and toward greater attention to the existing housing stock. In terms of management gains, the use of the Annual Housing Survey to set Fair Market Rents, the improvements to the Performance Funding System for public housing, and improvements to income recertification techniques are just a few cases where PD&R research has resulted in greater management efficiency for Department programs.

The second justification for increasing PD&R's appropriation is that priority research cannot be conducted at current budget levels. In reviewing PD&R's budget request, it is important to keep in mind that of the $20.9 million, roughly half is allocated directly to the American Housing Survey and other continuing and vital data series that the

Census Bureau, the SEC and other agencies collect for HUD. Thus, the dollars actually available for other PD&R research is closer to $10 million. It is not my purpose here to outline a comprehensive agenda of such high priority topics, but a few examples can give you a sense of how many very basic things about housing and urban development we still don't know and need to know if the Department is to fulfill its mission.

(1) PUBLIC WELFARE AND HOUSING:

It is estimated that about $5 billion of public assistance funds are spent each year for shelter allowances. This is almost as much as the $6.9 billion spent by HUD in FY 1981 for housing assistance (3). Yet, we have very little information about the extent and nature of overlap between HUD housing assistance and HHS general assistance spent on shelter. Neither do we know what proportion of welfare recipients live in substandard housing: ball-park estimates run as high as 30 to 50 percent (4,5). Thus, a sizable pool of taxpayer dollars ends up supporting inadequate housing. To what extent does this result from inadequate shelter payment standards in welfare programs or to the lacking supply of adequate units? How does this vary from place to place?

As you know, Congressman McKinney has proposed a Demonstration and Evaluation Project to address the inconsistencies and overlaps between these federal benefit programs as part of the 1983 House and Urban-Rural Recovery Act. But this initiative was not funded in FY 1984. In view of the substantial size of the expenditures associated with these two domestic programs, I view it as a very high priority research area.

(2) HOUSING AND LONG-TERM CARE OF THE ELDERLY:

Demographic imperatives will require carefully reasoned and designed approaches to meeting the housing needs of the elderly. One clear challenge for HUD in the future will be to respond to the dual requirements of adequate shelter plus the support services that are essential for continued independent living in the community. Even though private resources can meet the needs of a large share of the semi-dependent elderly, the total projected increase in that population implies a critical role for the public sector, and one in which housing assistance is viewed in conjunction with long-term care assistance.

As is the case in the relationship between public assistance and housing assistance just noted, there is also little coordination between housing programs and long-term care programs. The Section 202 Program and the Congregate Housing Services Program certainly represent a movement in this direction, but they are unlikely to serve more than a minority of needy households, leaving serious gaps in service coverage. The central question is how the large majority of needy households who are unserved by either of these housing programs or by long-term care services are managing. For this large majority of the elderly, we need to know whether their residential patterns and their individual residences are suitable for the cost-efficient provision of long-term care services. Since a continued public sector role will remain over time, we need information about how to structure subsidies and incentives to achieve cost-efficiency.

For example, the concentration of needy elderly in a single building or small area could drastically reduce travel costs associated with the delivery of in-home services and could make the marketing of in-home services more feasible (6,7).

The continued growth in the elderly population throughout the next several decades will only increase the pressures on HUD to respond with creative strategies. Despite the obvious urgency of this issue, the total FY 1985 research budget proposed for the PD&R office that funds research on the elderly and special users is only $150,000, and this represents a 25 percent reduction from FY 1984.

(3) ALTERNATIVE TARGETING STRATEGIES FOR HUD ASSISTANCE PROGRAMS:

With increasingly limited resources and pressures to target assistance programs as stringently as possible to the very poor, there is a need to rethink targeting strategies and definitions of eligibility for housing assistance. Various ideas have been proposed; for example, redirecting assistance to those who are "persistently poor" since they are the most permanently needy and represent a fraction of those who might qualify for assistance at any point in time. They are also far more likely to be living in inadequate housing conditions (8). The practicality of this or alternative targeting strategies, however, needs to be thoroughly tested; yet, there are no resources in the current budget to allow such tests.

(4) REASONS FOR NONPARTICIPATION IN HOUSING ASSISTANCE PROGRAMS:

Several analyses, including some using the Experimental Housing Allowance data sets, indicate that only about half of those households who are eligible for assistance actually participate in housing programs. And further, participant profiles suggest some "creaming" since the average incomes of participants are often considerably higher than the minimum standards. We do not know why eligible recipients, including those who may be most needy, do not participate. This question has been addressed for other assistance programs, most notable SSI and Food Stamps, but has not been studied for housing assistance.

The third justification for increasing PD&R's budget appropriation consists of a series of research management concerns. First, under current budget constraints, PD&R can carry out congressionally mandated studies, but little else. PD&R staff has virtually no leeway for discretionary expenditures on research such as, for example, when an important issue arises that requires immediate study or when an outstanding unsolicited proposal is submitted.

Second, one of the arguments that has been given for the severe cuts in PD&R's budget is the greater efficiency of conducting most research in-house. While I certainly believe that intramural research serves an important function, shifting the balance so drastically away from extramural research raises some serious problems. For one thing, in some instances, intramural research has a tendency toward getting lost, or at least diverted, as it makes its way into the public domain. Since any agency receives a host of "free" benefits from the reactions of the research community at large once a study or database enters the public domain, it is not only troublesome but also not in the government's self interest for studies to be kept under wraps. A wide range of rules requires the safe-keeping and accessibility of extramurally collected databases and governs the release of extramural research reports. It appears that a different set of rules may govern intramural research.

In addition to data release requirements, extramural research is, virtually by definition, an independent examination of the question at hand. Charges of biased studies contrived to support a particular political viewpoint are much less likely to be attached to independent researchers chosen in an open competition based largely on research skills.

Finally, at least at HUD, the argument that in-house research has a faster start-up time is simply incorrect. Since roughly 1982, PD&R has had approximately 10 Indefinite Quantity Contracts, or IQCs, with universities and independent research organizations which were awarded as a result of a competitive process. These IQCs were created for the expressed purpose of being able to conduct quick turnaround, high quality research. Therefore, a vehicle is already in place in PD&R for timely extramural research. These IQCs have rarely been used since they were awarded, certainly in part because of severe budget cutbacks.

In closing, I would like to emphasize that over the last four years, HUD has been able to draw on the capital of studies and evaluations that were conceived in earlier years. Without a substantial effort to restock the cupboard of ideas, we are in great jeopardy of not being able to determine the effectiveness of current initiatives or the wisdom of proposed alternatives.

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DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
OFFICE OF POLICY DEVELOPMENT AND RESEARCH

Budget Appropriations, FY 1981-1985
(million of $)

	Nominal	Real[1] (1981=100)
1981	$ 51.3	$ 51.3
1982	21.3	19.9
1983	22.7	21.7
1984	19.0	16.4
1985 (proposed)	20.9	17.0

[1] Using GNP price deflator for federal purchases of goods and services and assuming a 5% and 6% inflation rate for 1984 and 1985, respectively.

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- American Anthropological Association
- American Economic Association
- American Historical Association
- American Political Science Association
- American Psychological Association
- American Sociological Association
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Affiliates

- American Association for Public Opinion Research
- American Educational Research Association
- American Society of Criminology
- Association for Asian Studies
- Eastern Sociological Society
- Economic History Association
- Evaluation Network
- Evaluation Research Society
- History of Science Society
- International Communication Association
- International Studies Association
- Law and Society Association
- National Council on Family Relations
- North Central Sociological Association
- Northeastern Anthropological Association
- Population Association of America
- Regional Science Association
- Rural Sociological Society
- Social Science History Association
- Society for American Archaeology
- Society for the History of Technology
- Society for Research in Child Development
- Society for the Scientific Study of Religion
- Society for Social Studies of Science
- Southwestern Social Science Association

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- Cornell University
- Georgia Institute of Technology
- Harvard University
- University of Illinois
- Indiana University
- Institute for Social Research, University of Michigan
- University of Iowa
- The Johns Hopkins University
- University of Michigan
- University of Missouri
- University of Nebraska
- New York University
- Ohio State University
- University of Oregon
- University of Pennsylvania
- University of Pittsburgh
- Princeton University
- Social Science Research Council
- University of Southern California
- Stanford University
- State University of New York at Stony Brook
- Texas A & M University
- Tulane University
- University of Washington
- University of Wisconsin, Milwaukee

STATEMENT OF MS. SANDRA PARKER, DIRECTOR OF HOUSING FOR THE NATIONAL CAUCUS AND CENTER ON BLACK AGED

Senator GARN. We were scheduled to have Mr. Samuel J. Simmons. I understand substituting for him is Sandra Parker, Director of Housing for the National Caucus and Center on Black Aged.

Ms. PARKER. Thank you, sir.

Mr. Chairman and members of the HUD and Independent Agencies Appropriations Subcommittee, the National Caucus and Center on Black Aged welcomes the opportunity to testify at this hearing. We realize that your time is limited and, therefore, we will keep our testimony brief and read only excerpts from our full submission.

First, we recommend that there be sufficient lending authority for the section 202 housing for the elderly and handicapped program to finance the construction or substantial rehabilitation of 14,000 units. This would be similar to the projected amount for fiscal year 1984.

The actual need for new section 202 units is much greater than 14,000. However, we consider this to be a realistic goal, given the enormous budget deficits facing our Nation in the years ahead.

The administration has requested $498.3 million in new lending authority for section 202. This would finance about 10,000 units, approximately 29 percent below the current projection. This would only intensify the current housing crisis which dominates so many elderly blacks and threatens to engulf many more.

Section 202 is clearly one of the most effective, if not the most successful, housing program ever developed. It has provided quality housing for older Americans at a price within their reach.

The need for additional section 202 housing units is great. The 65-plus population is increasing at about 600,000 per year. It is estimated that five older persons are on the waitinq list for every available section 202 unit.

Construction of section 202 projects has a double benefit for our Nation. It not only provides reasonably priced quality housing for older Americans but also creates additional jobs to put more Americans back to work. This is vitally important because unemployment is still high by historical standards.

NCBA also proposes that there be report language to encourage HUD to continue its efforts to promote more minority sponsorship of section 202 projects. Earlier report language produced positive results in stimulating minority sponsorship of section 202 housing. We are recommending, therefore, additional report language to assure that this is not a one-shot or short-lived section.

Minority organizations have historically been underrepresented in the section 202 program because: No. 1, they frequently lack the necessary capital to submit an application; No. 2, they may not have a prior track record, which causes their proposals to be downgraded; No. 3, they may not have sufficient training in the grantsmanship jargon to compete successfully with other applicants for HUD funds; and finally, No. 4, they have usually been outside the good old boy network at HUD and its field offices.

Minority financers have much to offer for the section 202 program. They clearly have more familiarity with the problems encountered by aged minorities, and quite often they are more sympathetic and responsive to those in need.

Second, NCBA recommends that the congregate housing services program be funded at $4 million. This is the same amount as the current appropriation. The administration's budget request calls for no funding for this important program which provides a wide range of services to enable at-risk public housing and section 202 tenants to live independently in their own homes.

NCBA strongly believes that housing must be more than just bricks and mortar. In many cases, shelter must be provided with services to assist older persons to continue to live independently in their own homes, instead of nursing homes.

Third, NCBA recommends that existing housing assistance programs be funded at least at their fiscal year 1984 levels. Except for section 202, the administration's budget would virtually eliminate all housing construction. Instead, the administration would opt for a new voucher system.

NCBA fears that this approach may simply become a subsidy for inadequate housing without improving the supply of quality housing for the elderly poor. We are deeply concerned that aged blacks may be the big losers if a voucher system should replace future commitments to build section 8 and public housing.

The supply of rental housing designed for older Americans is already limited. Low-income older blacks are especially hard hit by our Nation's failure to develop affordable apartment units, since they are much more likely to be renters than elderly whites. About 38 percent of elderly blacks are renters, compared to 23 percent among aged whites.

A voucher system—which simply funnels money for an already inadequate number of quality housing units—will not increase the supply. But, it will drive up demand, which almost assuredly will boost the present high housing costs.

NCBA fears that a voucher system will only exacerbate the tight housing situation for elderly blacks and other low-income older Americans by forcing them to pay more than their already limited income for inadequate and poor quality housing.

Finally, we urge the subcommittee to approve funding for the proposed senior environmental assistance program, or SEAP. This program is designed to assist Federal, State, and local environmental agencies in carrying out environmental projects.

Both the House and Senate have approved legislation which would establish a SEAP within the EPA. Currently, EPA has funded an environmental demonstration program which employs about 2,000 older persons in diversified environmental activities. This demonstration program has been undertaken in cooperation with the Administration on Aging and the Department of Labor.

The EPA demonstration program is now funded at about $4 million out of EPA program funds and operates in 48 States.

NCBA recommends that a $10 million appropriation be provided for SEAP. If this measure does not become law before the subcommittee concludes its markup of the fiscal year 1985 Act, we recommend that funding for SEAP be included in a fiscal year 1985 Supplemental Appropriations Act.

In conclusion, we appreciate your consideration in inviting NCBA to testify. Over the years, this subcommittee has been responsive to the housing needs of aged blacks and other low-income older Americans. We are grateful and sincerely hope that you will continue to work for decent and affordable housing for all Americans, especially low-income aged persons.

[The statement follows:]

STATEMENT OF THE NATIONAL CAUCUS AND CENTER ON BLACK AGED, INC.

Mr. Chairman and Members of the HUD and Independent Agencies Appropriations Subcommittee, the National Caucus and Center on Black Aged welcomes the opportunity to testify at this hearing on the Administration's fiscal year 1985 budget proposals. Our testimony will focus primarily on housing and other programs serving aged Blacks and other older Americans.

We recognize fully that your time is limited. Consequently, we shall keep our testimony brief.

NCBA has essentially four key proposals which we urge the Subcommittee to adopt during the mark-up of the FY 1985 HUD-Independent Agencies Appropriations Act.

Section 202 Housing

First, we recommend that there be sufficient lending authority for the section 202 housing for the elderly and handicapped program to finance the construction or substantial rehabilitation of 14,000 units. This would be similar to the projected amount for FY 1984.

The actual need for new section 202 units is much greater than 14,000. However, we consider this to be a realistic goal, given the enormous budget deficits facing our nation in the years ahead. NCBA sincerely hopes that the Congress will opt for proposals to close gaping loopholes in our tax laws and to keep defense spending at more manageable levels.

The Administration has requested $498.3 million in new lending authority for section 202. This would finance about 10,000 units--approximately 29 percent below the current projection. This would only intensify the current housing crisis which now affects so many elderly Blacks and threatens to engulf many more.

Section 202 is clearly one of the most effective--if not the most successful--housing program ever developed. It has provided quality and tailor-made housing for older Americans at a price within their reach.

The need for additional section 202 housing units is great. The 65-plus population is increasing at about 600,000 per year. It is estimated that five older persons are on the waiting list for every available section 202 unit. This list would even be longer if section 202 projects did more advertising. However, this would only raise false hopes when no realistic prospects exists for a unit to become available.

Construction of section 202 projects has a twin benefit for our nation. It not only provides reasonably priced quality housing for older Americans but also creates additional jobs to put more Americans back to work. This is vitally important because unemployment is still high by historical standards.

NCBA also proposes that there be report language to encourage HUD to continue its efforts to promote more minority sponsorship of section 202 projects. Earlier report language produced positive results in stimulating minority sponsorship of section 202 housing. We are recommending additional report language to assure that this is not a one-shot or short-lived action.

Minority organizations have historically been underrepresented in the section 202 program because:

-- They frequently lack the necessary capital to submit an application;

-- They may not have a prior track record, which causes their proposals to be downgraded;

-- They may not have sufficient training in the grantsmanship jargon to compete successfully with other applicants for HUD funds; and

-- They have usually been outside the "good old boy" network at HUD and its area offices.

Minority sponsors have much to offer for the section 202 program. They clearly have more familiarity with the problems encountered by aged minorities. Quite often, they are more sympathetic and responsive to those housing and other needs.

Congregate Housing

Second, NCBA recommends that the congregate housing services program be funded at $4 million. This is the same amount as the current appropriation. The Administration's budget request calls for no funding for this potentially important program which provides a wide range of services to enable "at risk" aged public housing and section 202 tenants to live independently in their own homes. Otherwise, these individuals may wind up in a nursing home or other institution at a substantially higher public cost.

NCBA strongly believes that housing must be more than just bricks and mortar. In many cases, shelter must be combined with services to assist older persons to continue to live independently in their own homes, instead of nursing homes.

Congress recognized this urgent need in 1978 when it authorized funding on a longer term basis for congregate housing services. Unfortunately, this program--despite its great potential--is scheduled to be phased out.

NCBA further believes that congregate housing services should be continued as an on-going program. In summary, congregate housing services is not only humane but also makes sense economically for our nation and older persons. Quite clearly, funding for congregate services can provide a substantial dividend by preventing unnecessary or premature institutionalization.

Public Housing and Section 8

Third, NCBA recommends that existing housing assistance programs be funded at least at their FY '84 levels. The Administration's budget would virtually eliminate all housing construction. One notable exception is section 202 housing for the elderly and handicapped. Instead, the Administration would opt for a new voucher system.

NCBA fears that this approach may simply become a subsidy for inadequate housing without improving the supply of quality housing for the elderly poor. We are deeply concerned that aged Blacks may be the big losers if a voucher system should replace future commitments to build section 8 and public housing.

The supply of rental housing designed for older Americans is already limited. Low-income older Blacks are especially hard hit by our nation's failure to develop affordable and pleasant apartment units, since they are much more likely to be renters than elderly Whites. About 38 percent of elderly Blacks are renters, compared to 23 percent among aged Whites.

A voucher system--which simply funnels money for an already inadequate number of quality housing units--will not increase the supply. But, it will drive up demand, which almost assuredly will boost the present high housing costs.

NCBA fears that a voucher system will only exacerbate the tight housing situation for elderly Blacks and other low-income older Americans by forcing them to pay more than their already limited income for inadequate and poor quality housing.

Senior Environmental Assistance Program

Finally, we urge the Subcommittee to approve funding for the proposed Senior Environmental Assistance Program (SEAP). This program is designed to assist federal, state, and local environmental agencies in carrying out environmental projects.

Both the House and Senate have approved legislation which would establish a SEAP within the Environmental Protection Agency. Currently, EPA has funded an environmental demonstration program which employs about 2,000 persons 55 or older in diversified environmental activities. This demonstration program has been undertaken in cooperation with the Administration on Aging and the Department of Labor.

The EPA demonstration program is now funded at about $4 million out of EPA program funds. The program operates in 48 states.

NCBA recommends that a $10 million appropriation be provided for SEAP. We fully realize that this measure may not become law before the Subcommittee concludes its mark-up of the FY 1985 HUD-Independent Agencies Appropriations Act. If that is the case, we urge that funding for SEAP be included in a FY 1985 Supplemental Appropriations Act.

Conclusion

In conclusion, we appreciate your consideration in inviting NCBA to testify. Over the years, this Subcommittee has been responsive to the housing needs of aged Blacks and other low-income older Americans. We are grateful and sincerely hope that you will continue to work for decent and affordable housing for all Americans, especially low-income aged persons.

Senator **Garn**. Thank you. We appreciate your willingness to testify again this year. We certainly intend to include the report language you are requesting on minority sponsorship in 202 projects.

Also, your recommendations relative to the 202 units and senior environmental assistance program, we will certainly take a serious look at those.

Ms. **Parker**. Thank you, sir.

Senator **Garn**. Thank you very much.

Is Mr. John Simon here?

STATEMENT OF JOHN SIMON, GENERAL MANAGER, HOUSING AUTHORITY FOR THE CITY OF NEW YORK, ON BEHALF OF THE COUNCIL OF LARGE PUBLIC HOUSING AUTHORITIES

Mr. **Simon**. Mr. Chairman. I thank you for this opportunity to speak to you about housing in New York City and, in particular, but mostly about housing as it affects the large housing authorities in the country and the Council of Large Housing Authorities whom I represent today. I have submitted my written testimony to your committee and don't want to take your time in reading it. I hope that you or your staff will have time to take a good look at it.

I thought I would tell you that I'm not here today again to ask for more money. I wish I could ask for a whole lot more money, but I know the constraint under which you are operating.

But I thought I would tell you a little bit from the day-to-day perspective of how we operate, how our housing authority operates, and the problems which we face.

We have to meet a payroll every day. We have to collect rents, in these days, very high rents from our residents every day. We have to meet expectations by the tenants, many expectations, incidentally, developed by HUD, we have to face up to the problems of public housing in a way we had never faced that before.

The hardest problems are the persistent problems of poverty, hunger, destructive crime, demoralization, the problems of the inner city. Those of us who work and indeed live in the larges cities the most, and the New York City Public Housing Authority houses more people than live in the City of Pittsburgh, most of these developments in the inner city. Most of them have a very large population of very poor persons. We house those who no one else wants to house. The proof of that is that in the section 8 program. Where the private landlord has a great deal of power and ability to select or reject residents, they pick the cream of the crop. We, who operate large-scale housing developments, have to take the remainder.

But to what degree is public housing at the urban centerpiece of this problem? What are we supposed to do? Are we just supposed to be a real estate operation for which I think HUD is willing to fund us, or are we supposed to take care of the other problems which these residents face?

If we don't provide some assistance to these residents in the other areas, who will? Human resources hasn't done it, the Department of Justice hasn't been able to keep drugs out of the country; the cities don't have money to support those congregations of serious party families. We have to face those problems, and that is why we are always here, indeed, asking for more and for more money and to tell you that we cannot operate with subsidies that HUD wishes to provide for us.

We in New York have a population of 600,000 people living in public housing. But we have another 150,000 who are living in our developments because of the housing shortage who have no other place to live, who otherwise would be added to our 18-year waiting list or to the 6,500 homeless families who, last night, slept in motels. Not only do we have a very dense population which affects the quality of life, but we have many more people living in our developments, which further affects our costs, I said before, the quality of life, and the maintenance of our equipment.

No matter what we try to do, there is no understanding at HUD for this problem. They feel that the formula approach is all that is required and that we should live within those formulas.

I could tell you, Senator Garn, that the operating subsidy should be higher; yes, it should be higher, because HUD, as usual, has underestimated the cost of operating the authority; the very sharp increase of costs of utilities. HUD has this fiction about the recapture of investment income, much of which it has already recaptured, by the way, or of recaptured superunderestimated rental income. I just want to tell you that as far as New York is concerned, not only did the Inspector General make a very serious mathematical error in saying we owe $15 million in retroactive pay to HUD, indeed, HUD was saying $3 million.

The reason for mistakes are long, or I could tell you this. We transferred some programs from the State program. For 1 year, the Federal Government paid no operating subsidies. HUD's computer forgot to tell that to the Inspector General. So instead of us owing HUD money, HUD indeed owes the authority money, which when applied as the American explanation, may very well cost $40 million. HUD is in the recaptured business with a vengance. Sometimes I feel we are in a war recapture income; recapture subsidies; recapture units under construction, instead of assisting us in moving the program ahead and assisting us in moving the development program, shortening the 34 steps that HUD requires us to undertake before we can even put a project in the ground. All we hear about is, "If you don't meet the deadline by midnight, May 3"—and thank God that is past—"we will take away from you those units underground and alleviate to a small percentage."

Mr. Senator, I would like to point out one other very important——

Senator Garn. I will pass it on to Sam.

Mr. Simon [continuing]. Very important factor to you. One of the reasons we in New York are a successful housing authority is we don't have a single vacancy. We collect the 96 percent of our rents. We have no abandoned buildings. We have a waiting list for each of our developments in the fact that we have two things: We have an income mix and we have a security force. HUD has never recognized the need for a security force. The fact that we have a police force of 1,900 officers, $65 million of which, by the way, the city pays for, makes it possible for us to maintain and pool and continue to keep as viable housing our high rise as well as our low rise buildings.

As far as the income mix is concerned, we have approximately 70 percent working families and 30 percent families on social assistance or disability.

It is the ability of families that makes the income that enables us to have a viable program. No matter how much HUD talks about deregulation, no matter how much they talk about assistance, goals, management, all those things which we have, unless we recognize two things—the need for security in public housing and an ability to deal with the people problem—this program can't succeed.

Housing, public housing, whether we want to or not, regretfully, is becoming increasingly the housing of the last resort. Apparently, it is the position of the administration that it is the housing of last resort. If I may state this is the staff of Mr. Stockton's office, who I met with on February 23 and who said that.

To leave the housing of last resort requires the kind of assistance which HUD refuses to give, it requires social services, requires assistance for the elderly who move into our developments at age 65 or so. Within 15 years, we have an old age problem on our hands. It requires assistance for families and in New York, for 3,000 young people living in our developments, half of whom are between the ages of 16 and 21 and most of whom are unemployed, you know what that does to the buildings of the needy and to the vandalism. I would like to ask a rhetorical question. If we didn't house those families, who would house them? The private sector doesn't want to house them, and many people who criticize us and complain about us wouldn't want them as neighbors, either.

On top of this, we are faced with the outrageous, incorrect, malicious, and slanderous attacks upon housing authorities by the Inspector General who, without visiting most authorities, who is digging up old material who, without giving authorities a chance to answer, at the request or the instigation of HUD of perhaps not, has released press releases through the country which besmirch not only those authorities which are mentioned but give the whole program a bad name, a program which has served and is serving today 1.3 million families in the country at a cost of much less than what it would be if they were housed some other place, a program which is badly in need of assistance, sympathetic responses by the Congress and above all, sufficient funding.

Yet by these malicious attacks which I think are not only self-serving on the part of the Inspector General, but which HUD, I think, instigates as part of their program of retrenchment, make it difficult for us to appear and say to you, we have clean hands, which, indeed, we have, we just need your assistance.

I would like to make one other comment. One of the greatest needs of public housing is the need for modernization. We are grateful to the Congress and to your colleagues for having brought forward this SEAP program which takes care of emergency needs, energy and comprehensive modernization. We need a whole lot more of those moneys. There is the area where we are going to come to you and ask for additional funding. We in the eastern United States are faced with the terrible consequences of acid rain. We have millions and millions of dollars of exposure on brickwork, on leaks, on waterproofing which is required to be done. We hope that this study that has been undertaken by the Congress will help us. I would like to tell you that, and I'm not trying to make any points with Wally, but without his assistance, HUD will again go on down the road they did the last time and make a study which cost $2.5 million which was useful, inaccurate, and they can't find a door to open.

I think we are going down the same road again, doing a half-baked study, giving you and Congress and everbody else an inaccurate study with the help of Mr. Berger and other people in CLPHA, we are at least putting this study in the light where you are getting true and right information as to what the needs are. After all, we don't recapitalize our project as the private sector does after 30 or 40 years. We need to maintain what we have. It will be costly, but cheaper than to rebuild. Yes, our wear and tear is greater than the private sector. I explained to you the reasons why. That has to be taken into consideration, as well.

I make one last comment. One of our difficulties is HUD. Some says it stands for "Help Us Delay." Some people say they are not of good will. I don't know whether they are any more. I think their constant reorganization in the regional office makes it difficult to determine who does what where and when, and if you ask them, they don't know, either.

I will give you one very brief example, then I am finished. In August we attended a press conference with the Secretary to develop a minority youth employment training program, which God knows at least is needed, at least in New York. We have worked up a program in New York over the past 3 or 4 months, 80 percent of whch we funded by the housing authority's own money. We haven't come to HUD or the Congress to ask for more money. We just need to shift some funds around. On February 23 in Des Plaines I finally met with one of the Assistant Secretaries and said, "Look, the Sun is coming, would you please permit us to move our own moneys around so we can start the program?" I received a letter a week later saying, "You may go ahead subject to approval by the regional office to give you the details."

As of today, we have still not been able to move this program which should have started today. I am only talking about a half million dollar program, but we can't even move a program that the Secretary announced in a big press conference with mayors and Governors and housing authority executives in August, and they can't move the SEAP program; they can't move the construction program, they can't move the operating subsidies, and they can't give the guidance to the housing authority which is so badly needed.

You approved the amortization program in the last session of Congress. To this day, we don't know how much money we are getting, where to spend it, how to spend it, when to spend it. We can't tell the tenants and we can't plan.

As I testified before another committee as I said, when I used to be in the U.S. Army, we used to be early up and wait. With HUD it's wait and then hurry up and push the whole program out in a very short period of time, regardless of cost, regardless of the availability of contractors, regardless of whether we can do that much work in an occupied project.

If you can do anything about straightening out HUD, and I know that is hard for the Congress to do, it would indeed help us. We probably could do a lot more with the money we are getting from you in a timely fashion and in such a way that we don't always have to come back to ask for more money.

Mr. Senator, I thank you for listening to me. I ask that you take time to read the testimony and give some consideration to the fact as to whom we are required to house in the inner cities and what needs to be done to house them properly and not expose the situation in this country.

Thank you very much.

Senator GARN. I have been trying to do something to HUD for 17 years since I was mayor of Salt Lake City, but I haven't succeeded yet. Let me just compliment you on the progress you have made in achieving fuel savings in the New York Housing Authority and I would also like to thank you for your active participation in the SEAP Advisory Group. Thank you very much for your willingness to testify.

Mr. Simon. Thank you.

[The statement follows:]

STATEMENT OF JOHN SIMON, GENERAL MANAGER, NEW YORK CITY HOUSING AUTHORITY

INTRODUCTION

Mr. Chairman and members of the Committee, thank you for allowing me to testify here today. My name is John Simon and I am the General Manager of the New York City Housing Authority. I am speaking with regard to the Appropriations Bill for HUD/Independent Agencies for FY 85 on behalf of the Council of Large Public Housing Agencies (CLPHA).

CLPHA includes 35 of the largest Public Housing Authorities (PHAs) in the nation, PHAs which together manage over 40% of the conventional public housing stock of 1.2 million units.

As background, let me tell you a little about the New York City Housing Authority. It was established in 1934, 50 years ago, for the purpose of removing slums, providing standard housing for low-income families and operating and maintaining this housing stock. The Authority presently consists of 275 projects, with over 172,000 apartments, and provides shelter for over 500,000 persons. Approximately 90% of the program is Federally-aided, nearly one-half of the residents are under 21 years old and about 60,000 are senior citizens. The projects range from one-story houses to 30 story high-rise buildings; there are over 2,800 buildings to be maintained and 3,300 elevators to be serviced on a daily basis. Included in this housing stock are a number of multi-family projects which were formerly FHA insured, foreclosed by HUD when private ownership failed, and which were sold to the Authority for rehabilitation and management. The Authority also oversees the operation of a Section 8 Existing Housing Program, encompassing about 39,000 apartments, including contracts with over 9,800 landlords and housing about 90,000 persons.

The Authority is fundamentally a very large real estate operation, housing people for whom the private sector is unable or unwilling to house. We are fully occupied with a waiting list of 170,000 applicants, and collect approximately $350,000,000 annually in rents.

We strive to operate in an efficient and cost-effective manner and have achieved excellent results notwithstanding the fact that most projects are located in the inner and impacted areas of the City. Our success has been directly attributable to the introduction of a wide spectrum of modern management and business techniques such as management by objectives/results; computerized program and systems for rent collections, materials management, financial management, elevator and maintenance repair; and technical and executive management training programs.

1. OPERATING SUBSIDIES

Mr. Chairman, we want to thank you and the committee for your past support for the full funding of operating subsidies calculated under the Performance Funding System (PFS) formula. We are also appreciative of the public position you took in opposing any policies calling for the retroactive recapture of operating subsidies, as recently proposed by the HUD Inspector General. We agree with your sound analysis that such a recapture rule would, in effect, penalize PHAs for following accepted HUD practice. Sir, you were very correct in your observation that there is no evidence that PHAs used subsidy for anything other than legitimate housing needs. We also agree with your position that PHAs should have financial incentives to increase their revenues, because such increases translate, within a short time, to reduced operating subsidy payments to the PHAs.

It would seem that the issue of operating subsidy recapture, based on so-called "excess" rental income, will only be resolved if some legislative or report language is issued to give HUD some direction.

Mr. Chairman, I am attaching a copy of CLPHA's extimates of operating subsidy needs for FY 85 to my testimony. (Attachment "A")

We would like to point out that there has been a considerable decrease in the rate of growth of operating subsidies. For example, CLPHA's estimate of the FY 85 appropriation need, $1,253,969,000 is 7.1% lower than the actual appropriation for FY 83, and 7.9% lower than the actual appropriation for FY 84. This appropriation level, however, must be supplemented by a carry over of prior years' unobligated funds in the amount of $234,331,000.

On the other hand, HUD's operating subsidy amount of $1,123,500,000 projected for FY 85 is actually less than the actual subsidy amount for FY 1983 and would lead to disastrous budget cuts for PHAs. If HUD's amount were to prevail with no carry over of prior years' savings, the subsidy level would be at 80% or a subsidy shortfall of $56 million to the New York City Housing Authority.

PHAs have clearly saved substantial amounts of operating subsidies through implementation of very difficult and significant rent increases, as well as through energy conservation with the use of modernization funds. Our Authority, for example, has documented savings of almost 100 million gallons of fuel oil since commencement of its energy conservation program and these savings are valued at about $50 million. Also, for four years in a row (i.e., since 1979) cooking gas consumption has been reduced by almost 15% or 288,042,300 cubic feet and for three years in a row (i.e., since 1980), electricity consumption has been lowered by about 3% or 20,665,381 kilowatt hours. Attached is a copy of the Authority's Energy Management Report describing our programs. (Attachment "B")

Mr. Chairman, what PHAs and this Authority cannot control are the rates we pay for fuel oil, gas and electricity. CLPHA's utility price projections for FY 84 and FY 85 are dramatically higher than HUD's. Our experience in New York strongly supports the CLPHA estimates and once again raises serious doubt as to HUD's estimating credibility. For example, HUD projects a 2.4% utility increase in FY 1984 budget and an unbelievable 0.2% decrease in FY 85. On the other hand, CLPHA estimates a modest 5% and 7% increase for these years, respectively, or $132.1 million higher than HUD's projections. The Authority's experience has been that electricity rates have been increasing at 9% to 10% per year and gas for cooking at the rate of 15% to 20% per year. As for fuel oil, prices rose precipitously again during this past winter (which was colder than normal in many parts of the country) and the Authority was paying almost 20% higher rates than in March of 1983.

For 1985, the price structure for utilities remains volatile and unpredictable. We have to look forward to the ominous price deregulation of "new gas" (60% of the market) on January 1, 1985, as mandated by the 1978 National Gas Policy Act. This could result in a giant leap in gas prices. Also the nuclear plant failures which have devastated so many utility companies pose a significant threat to any price stability of electricity rates. I might note that the Authority and the Federal Government have been very fortunate in that we obtain our electricity from the Power Authority of New York, which has been charging about 25% less than the private utility companies. This saved the Federal Government over $21 million in 1983 alone. However, the Power Authority is also dependent on nuclear power. As for fuel oil, we all know of the continual crisis potential that exists because of the unstable Middle East situation.

Sir, we strongly urge appropriation of funds to enable the initiation of a PFS Appeals System to adjust Allowable Expense Levels (AEL) of PHA whose AEL's are currently inequitable, and to adequately fund PHAs for "costs beyond control". HUD recognized the inadequacy of the PFS inflation factor, and gave PHAs a one time retrospective adjustment. But HUD did nothing to correct base AELS that do not accurately reflect a PHAs true costs.

We have asked for $100 million for "cost beyond control" ($50 million) and the initiation of an Appeals Process ($50 million). Attached (Attachment "C") is some documentation as to what kinds of costs are typically included in the "costs beyond control" item. (New York, Minneapolis, San Antonio.)

2. MODERNIZATION

We appreciate the Committee's support of the public housing modernization program. The appropriation of $1.55 billion in FY 84 reflects this support. We hope the Committee will also support Resolution H.J. 517 which allocates another $63 million for modernization and directs HUD to immediately send the entire 1984 budget amount to the field for assignment to PHAs.

May I note that HUD has not released all appropriated modernization budget authority to the field. It is holding funds to apply to any PHA requests for trade-in of development funds for modernization. We do not oppose the concept of trade-in, but HUD's action does not truly benefit the PHAs, because the development funds originally allocated are, in effect, being recaptured. We do not believe the Congress intended the budget authority appropriated for public housing to be limited by HUD's circuitous recapture scheme. We are therefore asking that the Committee include language in the appropriations measure to direct HUD to transfer a proportionate amount of development budget authority to modernization budget authority as part of the trade-in process. This would prevent HUD from reducing the total amount of funds available for public housing programs.

Let me give you an example of how HUD's handling of the modernization program has impaired the PHAs ability to plan and act effectively. Earlier in the Fiscal year, many PHAs were directed not to apply for comp mod funds this year, for the reason that "there wasn't enough money", when in fact HUD was holding back the money and hoping to recapture some by transferring development money to the mod account and then deducting that from the total modernization appropriation level. In New York, we were also told by HUD staff to restructure downward our original FY 1984 application because there would not be sufficient funds in the Region to fund the level of our application.

HUD has now released a substantial portion of 1984 CIAP funds to the field, but PHAs have not received any additional instructions, or notice of opportunity to revise their applications so as to add work items or comprehensive projects. PHAs cannot effectively plan the comprehensive modernization of their stock pursuant to guidelines and regulations while being told to scale down on the comprehensiveness of the upgradings due to artificial funding constraints. If we fail to do the needed upgradings of a project's systems while it is the target of comprehensive modernization, we forfeit for ten years the opportunity to make any additional capital improvements under CIAP.

We are also concerned about HUD imposed ranking and review to determine whether a work item should be funded under the comprehensive, special purpose of emergency categories of CIAP. HUD decisions appear to be capricious and arbitrary, varying between regions. For example, New York City and the Authority are experiencing brickwork and masonry failures of increasing magnitude which, in part, are probably caused by acid rain. The United States puts into the atmosphere annually

27,000,000 tons of sulfuric acid and 22,000,000 tons of nitric acid. These acid salts are deposited on our buildings by winds and air circulation and expand with the addition of water. This expansion actually destroys masonry by causing it to spall and the mortar to fail. In addition, copper flashing is dissolved and parapets and steel lintels are also attacked.

As long as our atmosphere is violated by acid rain, the Authority can anticipate spending a great deal of additional funding on masonry repair. Failure to do so will result in conditions that will cause the health, safety and welfare of our tenants to be threatened.

However, the Regional Office has disapproved several masonry work items in our CIAP applications. This kind of erratic interpretation of program guidelines by HUD impedes PHA planning and management.

These kinds of actions and dictates by HUD obstruct the PHAs' efforts to carry out the modernization program in the way in which it was intended by the Congress. And then the Inspector General, of whom I will have more comments later, comes in and tells us that we aren't doing a satisfactory job of maintaining and modernizing the buildings and that it is the fault of the PHAs' own poor management.

Mr. Chairman, we believe HUD could easily facilitate the planning process for PHAs by funding, in advance of final CIAP application approval, the PHAs' costs for CIAP related architectural and engineering (A & E) work. Under present practice, HUD will not reimburse PHAs for A & E items until after the application is approved. The PHA must then rush to submit an A & E contract for each work item within ninety days of the approval. Incidentally, if you take a look at the recently revised CIAP Handbook, you will appreciate the effort PHAs must expend to get a modernization program underway. These are the kinds of rules and requirements that give bureaucracy a bad name.

I would like to make a few comments with regard to the study to develop a national estimate of total modernization needs. I want to thank Senate and House Appropriations Committee staff for their contributions to ensure that HUD develops a modernization study design which will hopefully result in an accurate needs assessment. We are particularly appreciative of the efforts of Wally Berger who has made a tremendous contribution as a member of the Modernization Research Advisory Group. Without his leadership and help we are certain that the study would have been greatly diluted and less than the product we expect as a result of having input into its design. We are still concerned, however, that HUD's efforts to expand the scope of the study, while holding the costs fixed, may harm the quality of the final product. HUD has included in the study design the additional topics of energy conservation opportunities, evaluation of the Comprehensive Improvement Assistance Program, troubled projects in need of redesign and accessibility. Research time spent on these topics will mean a reduction in the time spent on PHA sites collecting survey data for the national needs estimate. We do not need a study which is superficial and which yields misleading, erroneous or worthless results at a cost to the taxpayer.

Mr. Chairman, for FY 85 we believe a major thrust should be made to modernize and reoccupy vacant units, as well as to do comprehensive modernization on fully occupied projects. We think it's appropriate, therefore, for us to ask that your Committee raise the appropriations level for CIAP in FY 85 to a minimum of $2 billion. This level of funding would also help to offset the inroads of inflation, estimated at about 7% in New York, and enable PHAs to plan and effectively carry out truly comprehensive modernization, rather than the piecemeal approach the CIAP concept was designed to eliminate. We also think this level of funding will enable PHAs to schedule needed capital improvements within earlier time frames, and at less cost, than if deferred.

3. DEVELOPMENT

We recognize this Committee's historical support of the public housing development program. Unfortunately, the 5,000 units approved by Congress for FY 84 have not been allocated by HUD and we are uncertain as to HUD's plan for these urgently needed housing units. The delay, however, may be somewhat attributable to the various legislative restrictions in the authorization measure. Mr. Chairman, we submit that since the funding approval for the 5,000 units pre-dated the authorization measure, the restrictions should apply prospectively. If the Committee would clarify this issue, it should help in expediting the allocation and construction of this housing.

For FY 1985, we would like to request an appropriation for 15,000 units of new development. Mr. Chairman, public housing is not a costly program as recognized by the President's Commission on Housing and the need can be substantiated. Our surveys continue to show that there is a great need for adequate shelter for low-income people across the country. New York City, for example, has an almost non-existent vacancy rate, with literally many thousands of homeless persons and families (estimated at over 40,000); many of whom are living in shelters, expensive emergency housing, or the streets.

This unfortunate phenomenon has impacted severely upon the Authority's operation as well. We estimate, for example, that the Authority already has approximately 15,000 doubled-up families in its developments. These extra families are there without Authority's official approval and are the direct result of the severe housing shortage in the City. These families are, in effect, homeless and would undoubtedly swell the number of homeless families in shelters if the Authority were to take action against them. These doubled-up families in occupancy have increased the Authority's operating costs due to greater utility usage and heavier impact upon basic buidling equipment, such as elevators and public space. Moreover, the courts are reluctant to evict families for non-payment of rent since this will add to the homeless crisis in the City. Also, this same condition is occurring in other cities across the nation.

Let me note a few statistics regarding the status of New York's applications process. In addition to our waiting list of 170,000, we received over 130,000 applications in 1983; interviewed 150,000 applicants who poured into our offices for assistance; and received over 125,000 telephone inquiries. Our annual turnover rate was 3.6% or about 6,000 apartments, far less than needed to even make a dent in the City's housing crisis.

Moreover, without additional low-income housing, PHAs are under strong pressure to house substantially more socially and financially marginal families. Because of this endemic housing crisis, we are fast becoming the housing of last resort. This will have serious social and financial impact upon the public housing program.

This leads me to HUD's inexplicable efforts to shut down, arbitrarily and insensitively, the new construction pipeline. HUD would even take away those precious few units that Congress originally provided funding for. HUD has established rigid deadlines for site approvals and construction starts, even though for years it has given public housing a low processing priority and frequently delayed key approvals. While we can understand the recapture of dormant projects in the pipeline, we doubt that it was the intent of Congress to terminate viable projects in localities where there is desperate need for such housing. This was the New York City scenario, which was played out over the last few weeks and which deeply troubled all of us.

Briefly, the key date for start of construction or HUD recapture was May 3rd. The Authority has 12 projects consisting of 1,913 units which met the start deadline. We needed an extension for another 20 small projects consisting of 2,270 units, and valued at $152 million. We were asking for an average extension of only 4.6 months with the majority of projects needing only 2 or 3 month extensions. All these projects were quite far along in the development process; sites had been selected, developers chosen, plans well on the way to completion and, in most cases, the City had spent scarce capital funds to clear and ready sites. Some, however, needed HUD approval for amendatories. To our chagrin, HUD without warning froze all amendatories on April 17th, making it impossible for the Authority to meet the May 3rd deadline.

We worked hard to convince HUD that its posture was unreasonable and inequitable and with help from this Committee and other Members of Congress, we are happy to announce that HUD has backed down. Amendatories are once again being processed and the deadline for these starts was extended by HUD to May 18th. With regard to the other units, as of this moment, we are hopeful that HUD will set aside the May 3rd date and will grant a reasonable period of time to PHAs to start construction on viable projects. Given the desperate need for low-income housing in this City, any other decision by HUD would have been cruel and inhuman. Overall, how the Authority has about 6,000 units moving through its pipeline or being constructed.

4. THE IG REPORT AND HUD ATTEMPTS TO RECAPTURE PHA INCOME

Mr. Chairman, I can't let this opportunity go by without saying a few words about the HUD Inspector General's irresponsible attacks recently on Housing Authorities across the country, and the totally unacceptable way this is being handled by HUD.

The IG has issued a number of reports recently, some on troubled Authorities, some on a group of PHAs, some on individual Authorities. Each report seems to get its own press release before it's even shown to the Public Housing Authorities involved. Recently, a largely warmed-over rehash of a 1983 IG report was issued to the press with a HUD press release attached. None of the PHAs involved (16 of them) were informed about what was happening or given advance copies of the report.

In fact, the Executive Director of the Oklahoma City PHA has advised CLPHA that there were only three findings in its audit, all of which had been cleared during the course of the audit and that the Oklahoma Authority was not financially troubled. (See attachment D which is a statement from this Executive Director.)

All this, however, has created headlines in newspapers across the country about "BAD HOUSING AUTHORITY MANAGEMENT". This kind of a smear job is totally unacceptable, even as part of some kind of election year "dirty-tricks" campaign. The IG report should not go out as press releases. This is no way to improve public housing management. It just makes the job more difficult. PHAs shouldn't have to respond to media attacks.

Moreover, the IG's report, Internal Audit Income Projections Used By Public Housing Agencies Under The Performance Funding System, on New York City alone was so bad that the mistakes are going to significantly discredit the national extrapolated numbers and possibly the report itself. For example, for New York City, the IG "Total Difference" for the items of Rent, Interest Income and Other Income between "Actual Income Earned" and

"Estimated Income" (in the PFS) amounted to $57,395,876. Our calculated total difference for these same items was $29,874,703 which is less than the IG total by $27,521,173. When we apply the IG "Expense Allowance of Understated Inflation Factor" of $45,626,265 and adjust for payment in 1981 of 96.5% of subsidy; it appears that HUD owed this Authority $15,633,754, instead of the $11.9 million allegedly owed to HUD per the IG schedule.

Nevertheless, as a result of these reports, HUD now says it is considering trying to recapture $35 million in rental income in each of FY 84 and FY 85. We are completely opposed to this and are very thankful, once again, for your forthright statement and support on this issue.

5. SECTION 8 EXISTING HOUSING

As you know, the Section 8 Existing Housing Program has been one of the most successful programs, both as to results and costs. On March 31, 1984, there were almost 39,000 families living in decent, safe and sanitary housing in New York City under this Authority's Section 8 Existing Housing Program. More than 21,000 of these families are elderly or disabled. Almost 9,800 different landlords participate in the program.

It is unconscionable for the Administration to propose that this viable program be replaced by a system of Vouchers. The Voucher System provides for only two inflationary adjustments in the total amount of 15% over a five year period. This would in effect limit rent increases to an average of 3% per year. Does HUD believe that rents in New York City increase only 3% per year? Obviously, the difference would come from the tenant's pocket, which would now be made legal under the Voucher Plan.

Moreover, the Administrative Fee, which is the money spent to run the program to insure that units meet the Housing Quality Standards and that tenants pay their full and proper share of rent, would be cut from 8½% to 4½% under the Voucher Program.

If the voucher plan adopts an Administrative Fee of only 4½%, as is presently proposed by HUD, with everything else the same, the result would be a 42.3% decrease for Administrative Expenses. While any program could tolerate a slight decrease in funding, it would be shameful to so emasculate this program so that it would no longer be worth saving. The very features that HUD stresses so much: thorough going apartment inspections to insure that Housing Quality Standards are met; prompt response to tenant and landlord complaints; thorough going and timely verification of Annual Income for families in the program; - all of these would have to be so diminished as to make operation of the program completely inefficient if the proposed cuts are made.

In sum, Mr. Chairman, PHAs need a variety of housing tools. Section 8 Existing Housing is one of the best. It has worked well. We like it. We want it to continue in its present form.

Granted, for some PHAs a Voucher Program may be an additional helpful housing tool. We certainly remain interested in the results of the voucher demonstration program. But we don't think that this will be the answer in all cases for all PHAs, and we want the Congress to maintain the development program and the present Section 8 Existing Program, too.

6. RENT CAP

Mr. Chairman, may I briefly discuss another major issue which affects the continued affordability and viability of public housing. We believe that there is an urgent need for Congress to enact a rent "cap" in the public housing program so as to alleviate the severe economic impact upon lower income tenants (i.e., above 50% of Median Income) stemming from the open-ended thirty percent rent-to-income ratio requirement. Many of our working tenants will be required to pay rents ranging from $400 to $550 per month. Without a limitation on this open-ended rent structure, thousands of our most stable tenants may be forced to move out, thereby undermining the social and financial viability of many projects and surrounding neighborhoods, as well as increasing substantially the Federal operating subsidy requirements. We recommend a rent cap based on the sum of the average operating expenses and debt service of the PHA.

As background, the Omnibus Budget Reconciliation Act of 1981 preempted and voided all PHA rent schedules and removed all local control for setting rents. This approach to rent structuring did not take into consideration such factors as size of apartments, location of the buildings, number of persons in the family and age of the buildings.

In the Authority's Federally-aided program, there are 22,500 tenants (or 15% of the tenant body) who have incomes of $16,000 per year or more. They pay, however, 29% of the Authority's rental income. If these tenants are forced out - often into inadequate housing - they will be replaced by poorer tenants. We estimate the potential rental income loss to the Federal government at $47 million per year which, under the PFS, would have to be made up by operating subsidy at the expense of the taxpayers.

Like many other successful PHAs, we have achieved a remarkable degree of economic integration in a large number of our projects which are located throughout the City. We have learned that economic integration (consisting of working families of low and moderate income, as well as the very poor and elderly), has contributed substantially to the preservation and rehabilitation of many middle-income and working class neighborhoods, and has stabilized poorer neighborhoods. Should PHAs be forced to alter their successful pattern of economic integration, the future of the Federal Housing program in New York City and other cities would be jeopardized. We need your help to preserve this program.

7. SECURITY

Mr. Chairman, no presentation about public housing would be complete without mentioning the issue of adequate security. What do we mean by security? We mean a permanent, well trained security force. This force not only protects people, but also reduces maintenance costs and more importantly, by giving the tenants a sense of security, a stable community is reinforced. Also, without adequate security some of the rehabilitation and modernization efforts may not be sustainable.

Congress has on a number of occasions recognized the importance of security, as an important component in maintaining and improving the quality of life in public housing. We would like to see Congress address the overall security issue on a national scale and public housing is a good place to start. Like all programs, it would require funding and this could be allocated by a revision to the Performance Funding System.

CLOSING REMARKS

Mr. Chairman, in closing, may I say public housing continues to serve a need for millions of low-income people who have few, if any, alternatives for decent housing. Public housing waiting lists underscore the need for existing housing, as well as for additional units, particularly in the large urban centers.

For the most part the public housing program works well. The efforts now being made within the industry to develop objective standards will result in a better yardstick than now exists for measuring performance and good management.

Deregulation, which has been long promised by the Administration, but which remains a promise unfulfilled, can and will enable public housing administrators to manage more effectively. At present, we must manage under a system which is totally contradictory to sound management principles. PHAs are held responsible and accountable for program results, but authority for program decisions remains largely with HUD Central or Regional Offices.

We ask your support in our efforts to correct this unsound management practice by helping the program to achieve meaningful deregulation.

On behalf of CLPHA and the New York City Housing Authority, I want to thank the Committee for your past support of the public housing program and ask for your continued help to enable the program to fill the indispensable role it must play in communities across the country.

ATTACHMENT A

Council of Large Housing Authorities

ESTIMATE OF PUBLIC HOUSING OPERATING SUBSIDY NEEDS, FY84 AND FY85.

	FY83 (Actual)	FY84	FY85
Allowable Expense Level (AEL)	1565.5	1723.9	1857.7
Utilities			
Current year	1019.4	1094.1	1190.6
Prior year adjustments	(15.7)	20.0	10.0
Impact of rolling base	-	(4.2)	(5.0)
Sub-total utilities	1003.7	1109.9	1195.6
IPA Audit and other expenses	3.6	3.9	4.2
Add-ons, Social Security & Unemployment	6.0	6.6	7.0
Income			
"Old method" calculations	(1439.3)	(1536.0)	(1640.3)
Results of higher rent-income-ratio	-	(50.6)	(108.0)
1983 Act change in deductions	-	20.0	25.0
Sub-total income	(1439.3)	(1566.6)	(1723.3)
Sub-total all above (PFS Base)	1139.5	1277.7	1341.2
Non-PFS Authorities	41.5	46.4	47.1
Miscellaneous "off-sets"	(26.6)*	0.0	0.0
Costs beyond control	0.0	0.0	50.0
Appeals process (start-up year)	0.0	0.0	50.0
	1154.4	1324.1	1488.3

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*not all of these off-sets have yet been fully documented by HUD.

Notes and assumptions, including major variations from current HUD estimates or projections.

FY83

- o The FY83 figures are those reported by HUD as of 2/84. CLPHA is requesting documentation of the $26.6 million in "miscellaneous off-sets," which is reported to include over-obligations from the prior year; disallowed "cost beyond control" obligations from the prior year; 1981-82 "investment income overages"; and 1983 year-end targeted investment income adjustments. Primarily the 1981-82 recaptures are in question.

FY84

- CLPHA's projections for FY84 are the same as HUD's in the following areas: AEL; IPA; add-ons; income ("old method calculations"); income ("results of higher rent-income-ratio"); non-PFS Authorities; and "impact of rolling base."

- CLPHA's projections for FY84 utilities are $34.8 million higher than HUD's. HUD used a 2.4% price inflation factor; CLPHA 5%, for a difference of $27 million in current year utility costs. In addition, CLPHA estimates that the prior year adjustments will be $7.8 million more than HUD's estimates. Indications are already coming in that the Winter of 83-84 was considerably colder than normal; that utility rates (including oil) are rising markedly; and that PHAs outlays are rising accordingly.

- HUD estimates increased income to PHAs as a result of the change in deductions in the 1983 Housing Act. CLPHA estimates decreased income. The net difference between HUD and CLPHA is $27.3 million.

- HUD estimates that there will be a reduction in subsidy needs in FY84 of $35 million as a result of implementation of findings of the Inspector General's report. CLPHA has not included this in its FY84 estimate, for a difference of $35 million.

- The total difference between the HUD estimate of FY84 needs ($1227.0 million) and the CLPHA estimate ($1324.1) is $97.1 million.

FY85

- CLPHA's projections for FY85 are the same as HUD's in the following areas: AEL; IPA; add-ons; income ("old method calculations"); income ("results of higher rent-income ratio"); and non-PFS Authorities.

- CLPHA's projections for FY85 utilities ($1195.6 million) are $132.1 million higher than HUD's projections ($1063.5 million). In part, this is due to the higher base figures for FY84 used by CLPHA to make the FY85 projections. Also, CLPHA used a higher utilities price inflation rate than HUD (+7.0% versus a slightly negative rate projected by HUD). CLPHA also projects a positive year-end utility adjustment figure of $10.0 million, vs. HUD's slightly negative figure. And finally, CLPHA projects a smaller reduction in subsidy needs due to the rolling base than HUD's, $5 million.

- For the consequences of the 1983 Housing Act, HUD is projecting a $37.9 million reduction in subsidy needs, while CLPHA projects a $25.0 million increase, for a difference of $62.9 million.

- HUD also includes two items in the FY85 budget calculations that have been omitted by CLPHA entirely: a) a $35.0 million figure for rental income adjustments based on the I.G. report; and b) a $34.8 million figure attributed to "vacancy policy adjustments," to reflect HUD's proposed new policy of cutting the operating subsidies paid on vacant units.

- Finally, CLPHA includes two items not included by HUD in its calculations, $50 million for costs beyond control, and $50 million for the first year of an Appeals process. The former could be carried out under provisions of existing regulations: the latter would need new regulations.

- Summary of differences, HUD vs. CLPHA:

Utilities	$132.1 million
1983 Act	62.9
I.G. report	35.0
Vacancy policy adjustments	34.8
Costs beyond control	50.0
Appeals process, first year	50.0
Total differences	$364.8 million
HUD estimate of FY85 needs	$1123.5 million
CLPHA estimate of FY85 needs	$1488.3 million

The following is a calculation of operating subsidy needs, appropriations and carry-overs, based upon the CLPHA estimates shown above.

1983 Appropriation	$1,350,000,000	
Carry-over from FY82	597,000	
Total available for FY83	$1,350,597,000	
Obligated FY83 (actual)	$1,154,366,000	
Balance FY83 unobligated	$196,231,000	
1984 Appropriation	$1,362,200,000	
Total available for FY84	$1,558,431,000	
Est. FY84 need (CLPHA)	$1,324,100,000	
Balance FY84 unobligated (est.)	$234,331,000	(carry-over)
1985 Total Need	$1,488,300,000	
FY85 Appropriation Needed	$1,253,969,000	

CLPHA's estimate of the FY85 appropriation need, $1,253,969,000, is 7.1% lower than the actual appropriation for FY83, and 7.9% lower than the actual appropriation for FY84.

ATTACHMENT B

ENERGY MANAGEMENT REPORT

FROM THE CHAIRMAN

The energy crisis of 1973-1974 hit the New York City Housing Authority with devastating increases in the prices of fuel oil and utilities. Between July 1973 and January 1974, the price of a gallon of #6 fuel oil, the staple oil used to heat the Authority's nearly 3,000 residential buildings, rose by more than 200%. The cost of the electricity and gas required to service those buildings rose tremendously as well. For this agency, the immediate development of more effective energy cost controls on every level of our operation became—and remains—essential to its survival.

The major elements of the Authority's energy management system are described in this report. Overall, the program demonstrates that, despite escalating costs for non-renewable energy, the agency has been able to effect significant, measurable savings while continuing to provide a reliable and sufficient supply of heat, electricity and hot water to the more than 172,000 families who make their homes in the New York City program. Using a coordinated mix of physical improvements and management strategies, savings targets have been set and, more important, they continue to be met.

But the crisis continues. We remain vulnerable to future, severe, oil price hikes. We exist in a city in which electricity and natural gas prices are roughly twice the national average. The Authority, with the rest of New York City and the whole of the northeastern United States, will continue to be dangerously dependent on oil as our basic fuel at the same time as, from year to year, we face uncertain funding for vital programs. In brief, in no way is this report a declaration that the war against energy costs or energy waste has been won.

It is our hope that the following pages will be of value to other industries or groups involved in energy conservation programs. With every other American energy consumer, the Authority was forced to bite a very hard bullet in 1973-1974. In that year we began the process of putting our energy house in much better order. We've come a long way since then.

Joseph Christian

Joseph J. Christian

OPERATING DATA

The New York City Housing Authority is responsible for the operation of 275 public housing developments containing more than 172,000 apartments—homes for nearly 500,000 low-income New Yorkers. Created in 1934 to remove slums and provide decent housing to the poor at affordable rents, the agency has evolved from one 123-unit project on Manhattan's lower East Side to an extensive real estate plant consisting of some 2,827 residential buildings located on more than 2,500 acres throughout the city. Total holdings are valued at $2.5 billion and the overall budget for operating the program is nearly $700 million

CONSOLIDATED STATEMENT
INCOME & EXPENSES
1/1/82 to 12/31/82

INCOME

Rents	$309,785,065
Interest/Other Income	32,320,399
Federal subsidy	289,837,508
State subsidy	22,852,943
City subsidy	44,172,221
	$698,968,136

EXPENSES

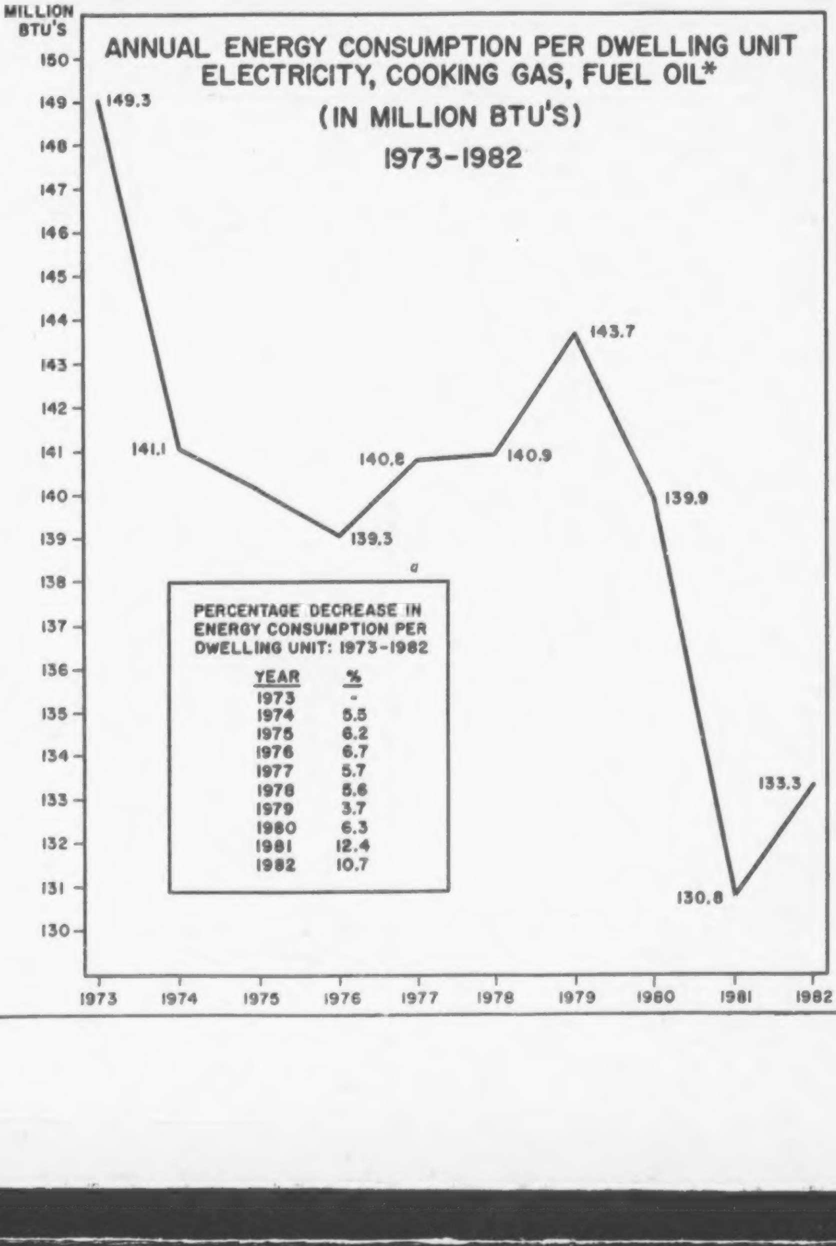
Management	$ 59,189,757
Janitorial	51,522,960
Police	70,458,831
Utilities	202,693,455
Painting	22,811,373
Repairs, Maint.	106,664,230
Insurance	9,509,516
Empl. Benefits	58,730,183
Payment in Lieu Taxes	9,296,165
Social service	5,322,470
Other expenses	6,704,631
Provision for Reserve (Replacement, Operating and Special, all Progs.)	96,064,565
	$698,968,136

annually. The utility bill for the Authority exceeds $200 million per year.

Residential buildings operated by the agency comprise 7% of New York City's housing stock. They range in size from one-story houses to 31-story apartment towers. Most, 58%, are between three and seven stories in height. The building mode is predominantly brick. Both an extremely low turnover rate (3.8% in 1982), and huge "waiting lists" for apartments—170,000 eligible applicants as of this writing—testify at once to the attraction of the program and to the scarcity of decent, affordable housing for low-income New Yorkers in the private housing sector.

There is a stereotypical profile of public housing tenants as prodigal energy users. The facts are otherwise. In 1979, the average family in New York consumed 16% *less* energy than the average American household.* In a city in which energy consumers pay 33% more per household than consumers in the rest of the United States, tenant consumption patterns are an effective rebuttal of the stereotype.

The fact of basically prudent energy consumption is the more striking when it is noted that Housing Authority tenants are, in the main, 365-day-per-year, 24-hour-per-day residents. Nearly 12% (or 58,000 people) of the population is comprised of elderly New Yorkers. Nearly 50% of the population—with all that it implies in terms of energy usage—is under the age of 21. The vast majority of buildings contain elevators—some 3,200 elevators in all. In short, few forms of housing present such difficulties for effective conservation than does the public housing program in New York City.

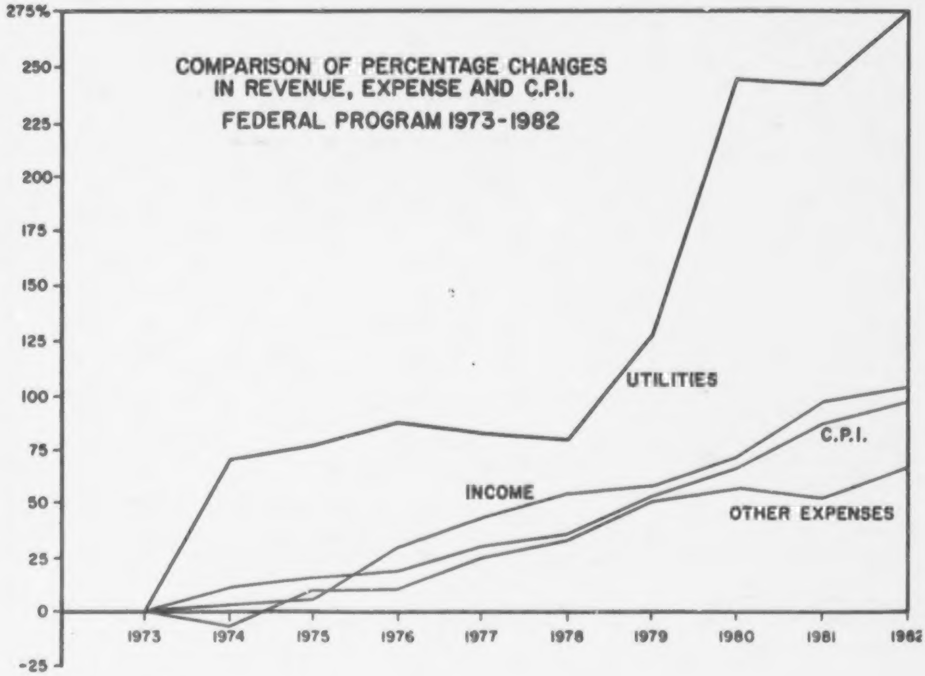


PERCENTAGE DECREASE IN ENERGY CONSUMPTION PER DWELLING UNIT: 1973-1982

YEAR	%
1973	-
1974	5.5
1975	6.2
1976	6.7
1977	5.7
1978	5.6
1979	3.7
1980	6.3
1981	12.4
1982	10.7

THE PROBLEM

Since 1973, the cost of a gallon of #6 fuel has risen from $.1291 to $.8022, an increase of 521%. One kilowatt hour of electricity cost $.0328 in 1973 and rose to $.0798 in 1982, a 243% increase. Cooking gas cost $1.61 per thousand cubic feet in 1973. By 1982, this had risen 293% to $6.33 per thousand cubic feet. As the following chart indicates, the percentage change in the Authority's utility expenses for this period increased by 275%, far surpassing all other income and expense increases. Of the average $75 monthy unit rental in 1973, the Authority expended about $27 (36% of rental income) on fuel or steam, cooking gas and electricity. In 1982, the average monthly unit rent was $148 and monthly utility expenses had increased to over $100 per unit, or 68% of the average rent, for a total energy cost in excess of $200 million annually. The figures for the chart are for December of each year.



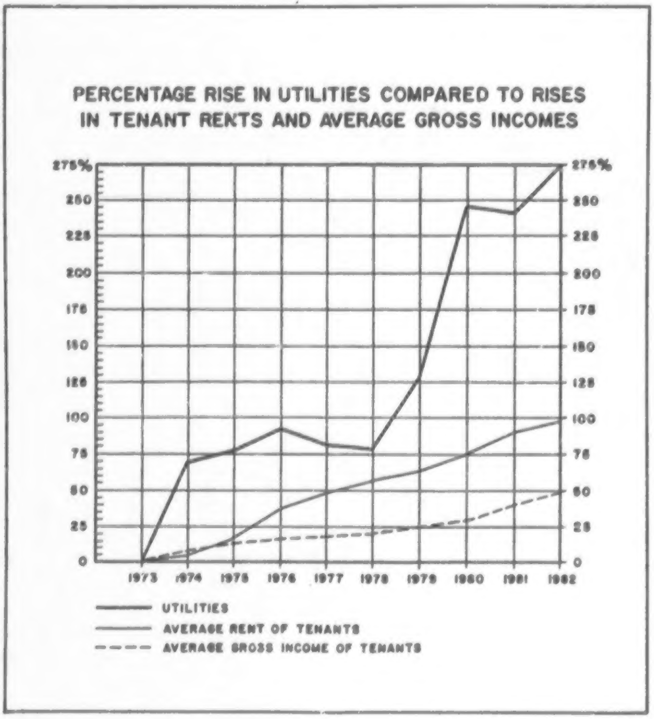
THE PROBLEM

COST COMPARISON PER UNIT MONTH
1973-1982

	1973	1982
Utilities (Includes Fuel)	$ 26.69	$100.02 (275%)
Other Expenses (Operating)	102.03	171.10 (68%)
Income (Operating)	80.89	164.67 (104%)
Consumer Price Index (all urban consumers)	*145.90*	*281.80 (93%)*

It is anticipated that energy costs will continue to rise at a more rapid rate than the growth in rental income. Before May 1, 1983, rents in the New York program were limited to 25% of family income. After that date, pursuant to Federal law, the agency began the process of raising rents in yearly stages to end at 30% of income in 1986.

In the Authority's view, the new rent hikes compromise the agency mission to provide housing at prices low-income New Yorkers can afford. The option of the private sector, pegging rent increases to energy costs, does not exist for the agency: the problem has been addressed from within through the development of the energy management program described in the following pages.


PERCENTAGE RISE IN UTILITIES COMPARED TO RISES IN TENANT RENTS AND AVERAGE GROSS INCOMES

THE ENERGY MANAGEMENT SYSTEM

ORGANIZATION

Energy management is directed by the Energy Task Force, a unit consisting of the Chairman and the Members of the Authority, the General Manager and other executive level administrators and professional staff. The Task Force, which was created in 1974, meets regularly to formulate energy policy, authorize new programs and review the progress of ongoing energy conservation initiatives. Task Force-directed efforts to reduce energy costs and increase efficiency are always made within the context of fulfilling the Authority's fundamental obligation to provide adequate service to the families of public housing.

To consolidate and maximize the Authority's energy conservation effort, responsibility for validating bills, monitoring energy consumption, coordinating energy saving programs and identifying funding sources has been centralized in the Department of Research and Policy Development. Two units within the Department, the Analysis Division and the Division of Energy Control and Conservation, serve as central data evaluation resources. In addition, the Management Department has provided technical assistance through a Project Energy Review Team (PERT), which completed a comprehensive energy survey at each housing project in mid-1981. Currently, the PERT function is continued within the Management Department through a special unit. An energy monitoring function is also provided through a special boiler inspection unit within the Management Department Heating Division.

The Design Department plays an increasingly important role in the energy conservation effort in the agency's new construction, building rehabilitation and extensive building modernization programs. Agency architects have as one of their principal responsibilities the creation of design improvements and innovations to increase energy efficiency.

In addition to its technical input into the energy saving program, the Authority has developed various approaches to increase both staff and tenant awareness of the problem as well as individual steps which, in total, can help significantly to conserve energy.

Achieving maximum success in each of the four goal areas is assisted by the agency's capacity to identify any relevant energy conservation opportunity. This activity, which issues from the core of the program, seeks to identify all physical characteristics and operational methods contributing to the inefficient consumption of energy and it is accompanied by studies of the efficacy of potential remedial activities. Several basic mechanisms have been used to discover potential energy savings opportunities and to allow for the development and implementation of cost-effective energy conservation measures.

ENERGY SURVEYS AND AUDITS

The Project Energy Review Team survey to determine energy savings opportunities at each housing development in the Authority operation was alluded to on page 6. Completed in mid-1981, the survey was conducted by housing project operating staff who were trained under a HUD-funded program operated by the New York State Energy Office.

The project by project survey identified weatherization measures, building and systems improvements and retrofit requirements which would do the most to improve ongoing energy conservation and cost-control programs.

GOALS

To reduce dependency on fuel oil.

To improve operational efficiency and reduce energy waste.

To involve tenants and staff in educational and motivational programs to save energy.

To encourage experimentation with, and application of, products and equipment that save energy and enhance maintenance capability.

Through a contract with Honeywell, Inc., the Management Department has developed a computerized item by item data base. The data are ranked both in terms of the "payback" period for recovering the cost of the improvement in energy savings and in terms of cost-effectiveness as a whole. As Comprehensive Improvement Assistance Program (CIAP) funds and special program funding become available, it will now be possible to address conservation priorities at each housing project with much greater accuracy and efficiency.

AERIAL INFRA-RED THERMOGRAPHIC SURVEYS

Since 1980, the Authority has operated a program which provides the agency with aerial infra-red thermographic studies of all of its housing projects. Shot in the evening or early morning hours from an airplane, this type of photograph (see next page) clearly pinpoints heat losses emanating from defective roof insulation or deteriorating underground steam and hot water lines. After a successful experiment involving five Lower East Side projects, the program was extended to all projects during the 1980-1981 heating season.

By joining with Consolidated Edison, the Authority was able to share the cost of the airplane, equipment and personnel. The Authority's cost for the entire survey was $63,500. The major benefit obtained was the immediate ability of the Authority to determine the condition of roofs, hot water, steam and condensate underground leaks. Staff estimated that by utilizing the survey for the roofs, which eliminated the need for individual detailed inspections, the process provided an immediate saving to the Authority of $170,000. It has been further estimated that savings of $35,000 in manpower were achieved in locating existing steam leaks and eliminating excessive restoration due to unnecessary test holes. The Authority anticipates, based upon our ability to immediately identify leaks and other problems, an annual energy saving of approximately $250,000 to $300,000 per survey.

Peripheral benefits from the survey included the ability of Authority technical staff to evaluate various conditions of buildings such as parapet wall leaks and excessive wall radiation, and in making engineering analyses for the various structural needs of particular buildings which will result in future energy and cost savings to the agency. The 1982-1983 survey is being conducted by the Authority in a joint venture with a new partner, the New York Power Authority (PASNY). At this writing, 60% of all projects have been surveyed.

SUMMARY DATA

The Authority's energy management system has been responsible for a 10.7% decrease in overall energy consumption per dwelling unit, from 149.3 million BTU's in 1973 to 133.3 million BTU's (seasonally adjusted) in 1982, due primarily to a decrease in fuel consumption for heat and hot water. As will be explained in the table on pages 10 and 11, the program has resulted in a savings of nearly 90 million gallons of fuel oil for a dollar savings totalling more than $44 million. As energy costs continue to rise and the Authority's conservation program is expanded and improved, even greater future savings are anticipated.

PROGRAM HIGHLIGHTS

- Involved staff and tenants in ongoing educational and motivational programs encouraging energy conservation in project apartments, offices and maintenance facilities.

- Instituted training programs to enhance the technical skills of heating plant personnel.

- Established a program for energy audits of all Authority housing projects, including an analysis of the cost effectiveness of various retrofit, weatherization and energy conservation measures.

- Conducted aerial infra-red thermographic studies which successfully identified significant amounts of heat loss emanating from underground steam lines and deficient roofing.

- Applied the City's Board of Health minimum apartment temperature standard of 68 degrees between 6:00 a.m. and 10:00 p.m.

- Installed a computerized monitoring system for fuel oil consumption encompassing every Authority project, with baseline consumption data, objectives for fuel savings, performance indicators to measure progress and a monthly reporting mechanism which identifies inefficient boilers and heat distribution systems.

- Instituted a program for the conversion of boiler plants from fuel oil to natural gas, thereby lessening dependency upon oil.

- Installed water-saver shower heads and flow restrictors to reduce the amount of hot water consumed.

- Replaced energy inefficient and difficult to maintain steel casement windows with double-hung, double-glazed aluminum windows.

- Installed energy-efficient roofing insulation in all new construction and major rehabilitation work.

- Developed and implemented a computerized system to monitor the consumption and cost of electricity in all operating projects.

- Replaced incandescent lighting by installing sodium vapor and/or fluorescent lighting in outside areas, public halls and lobbies and apartment kitchens.

- Installed electronic ignition gas ranges with attendant gas cost savings.

- Substituted fuel-efficient, four cylinder vehicles for larger, less efficient models in the Authority's emergency service operation.

- Developed a system of cooperative truck deliveries for central storerooms.

- Created an Authority-wide water conservation program.

- Conducted experiments with new methods, materials and equipment in an ongoing attempt to conserve energy.

- Promulgated regulations and procedures under which tenants may install and operate electrical appliances.

FUEL OIL CONSERVATION

The largest segment of the Authority's utility cost is for fuel consumed to produce heat and hot water. The majority of projects are heated by central heating plants (supplying one or more projects) using #6 fuel oil. The balance of projects are heated by the use of steam, firm (or temperature controlled) gas, or #2 or #4 fuel oil. This section documents agency steps to decrease consumption levels of fuel for heat and hot water through more effective production and distribution and through weatherization of buildings to prevent unnecessary heat loss. The table at the right documents the fuel oil savings effected between 1974 and 1982.

REPORT ON FUEL OIL SAVINGS FROM 1974 THROUGH 1982

(PART A)

Year	Annual Consumption	Annual Degree Days	Average Number Of D.U.s*	Gallons For Heating
1971-73**	121,255,310	4732	145,298	67,538,639
1974	112,575,255	4665	147,064	58,006,056
1975	112,515,029	4472	148,606	57,575,391
1976	118,188,820	5190	149,934	62,756,220
1977	117,494,452	4952	150,393	61,894,160
1978	119,699,042	5184	150,357	64,112,059
1979	112,772,749	4426	151,075	56,920,322
1980	113,052,170	4949	148,067	58,311,801
1981	93,643,649	4657	137,877	55,223,732
1982	95,724,115	4571	136,819	56,303,306

**Number of Dwelling Units are based upon those projects which use fuel oil.*

***Base year is average annual consumption for 1971-1973.*

FUEL OIL CONSERVATION

REPORT ON FUEL OIL SAVINGS FROM 1974 THROUGH 1982

(PART B)

Efficiency-Gallons/DD Per D.U.	Gallons Saved Over Base Period	Average Cost/Gallon Of Fuel	Money Saved Each Year VS. Base Period	Gallons Consumed Per D.U.
.0982	——	$ .1291	——	834.5
.0846	9,330,328	.3075	$ 2,869,076	765.5
.0866	7,708,966	.3227	2,487,683	757.1
.0806	13,695,571	.3163	4,331,909	788.3
.0831	11,245,667	.3570	4,014,703	781.3
.0823	12,393,266	.3399	4,212,471	796.1
.0851	8,759,419	.5436	4,761,620	746.5
.0796	13,629,775	.8110	11,053,748	763.5
.0860	7,833,537	.8886	6,960,880	679.2
.0900	5,128,277	.8022	4,113,904	699.6

TOTAL GALLONS SAVED OVER 9 YEARS	89,724,806
TOTAL MONEY SAVED OVER 9 YEARS	$44,805,994

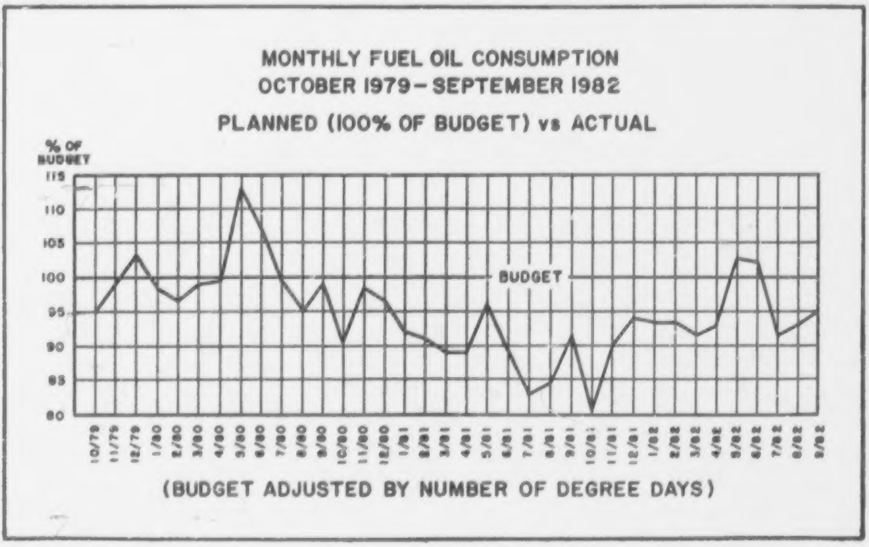
FUEL OIL CONSERVATION

THE PHASE PROGRAM

In 1974, the Authority instituted a *phase* program to insure the uniform operation of heating plants under decreasing levels of fuel availability. Since that time, the Authority has operated under a Phase "O" which provides that heating of Authority apartments shall be in strict accordance with Board of Health minimum requirements. The program has resulted in a (at least) 2% reduction in apartment temperatures from the pre-1974 standard. This phase maintains apartment heating temperatures at 68° between the hours of 6:00 A.M. and 10:00 P.M. and 55° for the hours of 10:00 P.M. to 6:00 A.M. Hot water temperature was reduced from 140° to a maximum of 130° at the tank, allowing for 120°F hot water at the faucet. In buildings either populated exclusively by the elderly or where the majority of families are elderly, the Authority maintains slightly higher heating temperatures during the winter months.

COMPUTER ASSISTANCE

The Authority has developed a computerized system for monitoring the consumption of fuel on a month-by-month basis for all of its operating projects. Baseline consumption data has been developed for each location with specific goals established for improving efficiency measures by the performance indicator of consumption per degree day per dwelling unit. With monthly consumption data readily available, technical staff has been able to identify quickly any over-consumption and to remedy the condition promptly. Baseline consumption data are periodically reviewed and refined as boiler plants and related equipment are modernized and systems improved. The system is an invaluable mechanism through which the Energy Task Force can analyze Authority-wide energy conservation performance on a monthly basis. A graph of the type reproduced below is updated each month.



MONTHLY FUEL OIL CONSUMPTION
OCTOBER 1979 – SEPTEMBER 1982

PLANNED (100% OF BUDGET) vs ACTUAL

(BUDGET ADJUSTED BY NUMBER OF DEGREE DAYS)

FUEL OIL CONSERVATION

WEATHERIZATION

The Authority has an ongoing program of weatherizing some doors and replacing old, inefficient steel casement windows with energy-efficient, double-hung, double-glazed thermal break windows. At this writing, more than 300,000 new windows have been installed in 44,000 apartments at 39 housing projects. While there have been ancillary problems of mildew and condensation due to the installation at various projects, energy savings have been impressive. At this writing, the agency has 33 additional housing developments in the window replacement pipeline involving 37,930 apartments and approximately 265,500 windows.

An analysis of fuel consumption at nine projects before and after installation of double-hung, double-glazed windows showed a 10.5% reduction in overall fuel consumption. A more refined analysis, one which excluded the constant hot water budget factor for each project (a figure calculated from fuel consumption during the summer), showed a 17.6% reduction in fuel consumption for *space heating only*.

The following table compares fuel consumption for space heating at the nine housing projects before and after installation of new windows. All nine projects use #6 fuel oil for the production of heat and had windows replaced prior to the 1981-1982 heating season.

WINDOW-RELATED FUEL SAVINGS AT NINE HOUSING DEVELOPMENTS

	CONSUMPTION/DEGREE DAY		SAVINGS/DEGREE DAY	
PROJECT	BEFORE	AFTER	GALLONS	PERCENT
Cypress Hills	134.6 gal.	110.6 gal.	24.0 gal.	17.8%
Brownsville	118.6	100.5	18.1	15.3
Patterson	181.8	141.5	40.3	22.2
Johnson	122.2	101.9	20.3	16.6
Albany	127.7	109.2	18.5	14.5
Amsterdam	103.5	82.2	21.3	20.6
Carver	105.1	85.3	19.8	18.8
Sedgwick	68.4	56.2	12.2	17.8
Gun Hill	63.5	57.5	6.0	9.4

BEFORE INSTALLATION CONSUMPTION PER D/D	1025.4 GAL.
AFTER INSTALLATION CONSUMPTION PER D/D	844.9 GAL.
SAVING	180.5 GAL. (17.6%)

FUEL OIL CONSERVATION

Since neither the number of degree days nor the type of windows affects hot water consumption, this method presents a more accurate picture of the effects of window replacement on fuel consumption. An important side benefit of the window installation program has come in the form of a significant reduction in breakage. Estimates of savings in glass replacement costs and painting average $20,000 per year at the 39 projects—operational savings of $780,000 annually.

To further illustrate the magnitude of fuel savings, consumption before and after window replacement was compared for an average *heating season* at each project.

FUEL CONSUMPTION/AVERAGE HEATING SEASON

PROJECT	DWELLING UNITS	TOTAL (GALLONS) BEFORE	AFTER	PER DWELLING UNIT BEFORE	AFTER
Cypress Hills	1,442	646,080	530,880	448.04 gal.	368.16 gal.
Brownsville	1,338	569,280	482,400	425.47	360.54
Patterson	1,701	872,640	679,200	487.24	379.23
Johnson	1,310	586,560	489,120	447.76	373.37
Albany	1,229	612,960	524,160	498.75	426.49
Amsterdam	1,084	496,800	394,560	458.30	363.99
Carver	1,246	504,480	409,440	400.88	328.60
Sedgwick	786	328,320	269,760	417.71	343.21
Gun Hill	733	304,800	276,000	415,83	376.53
TOTALS	10,969	4,921,920	4,055,520	3999.98	3320.12

TOTAL
BEFORE .....4,921,920 GALLONS/YEAR 449.12 GALS./D.U./YEAR
AFTER.......4,055,520 GALLONS/YEAR 370.06 GALS./D.U./YEAR
SAVINGS ......866,400 GALLONS/YEAR 79.06 GALS./D.U./YEAR

There are also qualitative and aesthetic aspects to window replacement. Apartments have been made more comfortable by the reduction in air infiltration and drafts, and overall project appearance has been greatly enhanced. Tenant reaction to the new double-hung, double-glazed aluminum windows has been overwhelmingly positive. As funding becomes available, the program will continue.

Currently, in partnership with the National Institute of Building Services, the Authority is experimenting with several approaches designed to minimize mildew and condensation problems. The problem is complex in origin. In most instances, the increase may be attributed to the high humidity in apartments caused by washing and drying clothes, domestic cooking, stove overuse and the like. Cutting down dramatically on air infiltration, the new windows have also cut off the natural ventilation which, in years past, effectively combatted mildew and/or condensation in most apartments.

BOILER PLANT MODERNIZATION

Energy savings will accrue from the Authority's program to modernize and increase the efficiency of boiler plants and heating distribution systems. This work, a high priority item of Federally-funded modernization programs and of the Authority Transfer Program (a program through which most state and city-subsidized projects were converted to Federal subsidy) is being performed at 42 housing projects. In addition, at sixteen other projects, boiler plants have been converted from fuel oil to natural gas.

As much of this work, including the relagging of boilers and the reinsulation of pipes is still in progress, a complete cost and savings evaluation will not be performed until 1985. Early indicators (despite some problems with equipment and higher than anticipated staff retraining costs) suggest that when completed the modernization work will provide significant savings.

SHOWER HEADS AND FLOW RESTRICTORS

As a part of the Authority's water conservation program, flow-restricting washers have been installed in the shower heads at each project. At one project, East River Houses, a $15,000 grant from HUD enabled the agency to install water shower heads with built-in flow restrictors in 1978. The *Energy Conservation Workbook*, which is published by the New York State Energy Office, estimates that the water shower heads and flow restrictors create a saving of approximately 3 million BTU's per apartment per year.

ROOFING INSULATION

The Authority uses the most efficient insulating material available to reduce heat loss transmission and hold down costs. For new work, and on major rehabilitation work, the agency uses a combination urethane-perlite board of a thickness to achieve a "U" factor of 0.05 for the entire roof construction (approximately 3 inches). This type of insulation complies with the State Energy Code which was established as an energy conservation measure for all new construction and certain additions to existing buildings. Based on a benefit/cost analysis prepared by the Authority, use of urethane-perlite board will result in a projected 36% reduction in heat loss when compared with previously used insulating materials. Through funding provided by CIAP, the insulation program will be performed at some 49 housing projects during the next few years. Once the work is completed, the agency projects savings of approximately $1.5 million per year.

Since 1973, the Authority's electricity consumption per dwelling unit has increased a scant 6.8% while the cost per dwelling unit has risen by 160%. The following chart illustrates consumption and cost data between 1973 and 1982.

In 1982, Authority-wide electricity consumption totalled more than 870 million kilowatt hours at a cost of over $69 million. Consumption (including public light and power) averaged 424 kwh per dwelling unit per month, a 2.9% reduction over 1980.

The cost per kilowatt hour, however, increased by 14.8%. The Authority has instituted a number of educational, managerial and retrofit activities to control consumption and lead to the more efficient use of this increasingly expensive energy source.

NEW YORK POWER AUTHORITY

In 1976, the New York State Legislature authorized the Power Authority of the State of New York (PASNY) to furnish electricity to governmental entities in the downstate area of New York. Beginning in October 1976, the Housing Authority quickly became one of the agency's biggest customers. As a "PASNY" consumer (the acronym remains even as, in 1982, the agency was renamed as the New York Power Authority), the Authority's rate classification for service to most of its projects was about 31% less than the charge for equivalent service from Con Edison. During the first six months with PASNY, the Authority's rate/kwhr averaged $.040—compared to $.0588, 45% less than the same service would have cost from Con Edison.

BILLING

The Power Authority produces the electricity at two conventional plants and one nuclear

ELECTRICITY CONSUMPTION & COST 1973 - 1982

							Consumption % of Increase (or decrease)	
Year	# Of DU's	Consumption KWH	Cost	Cost Per KWH	**Consumption Per DU/Yr KWH	Cost Per DU/Yr	Over 1973	Over Prior Year
1973	157,646	750,860,445	$24,617,821.62	$.0328	4,763	$156.23	—	—
1974	161,003	770,907,090	$40,488,233.76	$.0525	4,788	$251.37	0.5	0.5
1975	164,767	794,105,503	$43,810,055.11	$.0552	4,820	$266.06	1.2	0.7
1976	166,077	830,616,147	$40,732,173.65	$.0490	5,001	$245.05	5.0	3.8
1977	167,978	834,507,673	$36,206,688.00	$.0434	4,968	$215.61	4.3	(0.7)
1978	168,492	845,397,582	$36,740,211.73	$.0435	5,017	$218.24	5.3	1.0
1979	169,433	863,944,482	$41,902,965.26	$.0485	5,099	$247.30	7.1	1.6
1980	169,927	890,537,177	$61,922,375.33	$.0695	5,241	$364.25	10.0	2.8
1981	170,837	879,081,735	$62,153,119.43	$.0707	5,146	$363.82	8.0	(1.8)
1982	171,226	871,188,801	$69,500,029.69	$.0798	5,088	$406.02	6.8	(1.1)

***Consumption per DU includes both tenant and Public Light and Power.*

plant which it purchased from Con Edison. The electricity is delivered to the PASNY customers over the Con Edison grid. As a result, the PASNY bill consists of two parts and two different rates; one for production and one for delivery.

Each year the Power Authority calculates its needs to meet the bondholders' claims and establishes a production rate for the coming year. The delivery rate changes every time Con Edison is granted a rate increase by the New York Public Service Commission. However, the delivery rate is not the same for the Power Authority as it is for private customers of Con Edison since the production share of the rate does not apply to the Power Authority. From 1977, the first full year with the Power Authority, the average rate per/kwhr went from $.04 to $.08 per/kwhr for the year of 1982. During the first four months of 1983 the average rate rose to $.083 per/kwhr.

As of mid-1983, "consumption" and "demand" in the classifications in which most of projects fall was computed at the Con Edison SC#8 rate which was found to be 23% higher than the Power Authority bill for the equivalent classification. This represents a savings of almost $1.4 million for the one month. The Con Edison rate was $.103 per/kwhr as compared to $.083 per/kwhr for PASNY. The 1977 conversion to PASNY provided the agency with electrical power at an overall savings of $55 million.

ENERGY DATA MANAGEMENT

The Authority has developed and is completing installation of a computerized Energy Data Management System for the monitoring of consumption and cost of electricity in all operating projects. The system will enable the Authority to establish a data base of electrical consumption, demand and cost, by project and buildings, and will significantly improve the energy conservation effort. Development and implementation have been accomplished in two phases.

INTERFACE WITH PASNY

As indicated, the Authority obtains almost all of its electrical service from the New York Power Authority. The monthly billing consists of a computer print-out upon which a substantial amount of the usage and cost data are aggregated. The account numbers, for example, do not conform to individual projects, but contain all the buildings of several projects and part of the buildings of other projects. This phase of the Energy Data Management System, which is operational, interfaces the PASNY computer tape with Authority project records, and places more than 2,600 meter numbers in project order, thereby permitting a deaggregation of data. Through this computer system, staff has the capability to break down the PASNY computer form bill so as to distribute the consumption, demand and cost to each project, saving a substantial amount of staff time and cost.

The second phase, which is nearly operational, automates the bill verification and evaluation process. This system provides for a History File to hold ten years of monthly data from which quarterly, semi-annual and annual reports are generated. Monthly reports are obtained, permitting a comparison of consumption and demand by project and building with the previous *month* and with the same month of the prior *year*. Included in the program is a means of adjusting errors found in prior PASNY bills and of updating and correcting the History File. With the History File in place, trends will continue to be monitored for changes in consumption, rate per/kwhr and costs.

Now that data is increasingly available, with tenant consumption and public lighting and power consumption deaggregated, it is possible to focus on those buildings having higher than average consumption levels. This information is used to examine technical and building design factors and tenant consumption patterns as a first step in reducing consumption levels. Where tenant electricity consumption is high, the educational and motivational program is intensified at individual buildings.

FLUORESCENT LIGHTING

In 1982, a Home Energy Assistance Program (HEAP) grant made it possible for the Authority to replace 120,000 incandescent light fixtures in halls, lobbies and stairwells with vandal-resistant fluorescent fixtures. The Authority estimates that if all hall and stairwell lights are replaced by 20 watt fluorescents in the balance of the projects, yearly savings should approach 64 million kwh/year for a cost saving of approximately $4.5 million. The "payback" for installation through savings could be accomplished in approximately one year.

The agency has applied for HEAP III funding to continue the replacement program. The replacement of incandescent fixtures in the remaining 72,656 apartments will produce a savings of more than 8.5 million kwh/year with dollar savings (in 1982 dollars) of $705,000 per year.

To test the accuracy of these estimates, actual readings of public lighting and power (PL&P) meters were compared before and after installation of fluorescent fixtures at two projects. At 830 Amsterdam Avenue (159 dwelling units) there was a decrease of 125,982 kwh/year in 1981 (fluorescents installed) over 1978 (incandescent lighting). This survey found a 62% reduction in consumption.

At Wise Towers in Manhattan (399 dwelling units) PL&P readings were available for August and September of 1981. They were compared to the 1978 readings for those months. Creating yearly consumption levels from this data, the actual decrease totalled 161,400 kwh/year, compared to estimated savings of 162,586 kwh/year, a 67% decrease in PL&P electricity consumption.

The Division of Energy Control and Conservation continues to monitor electricity consumption at projects with fluorescent lighting to quantify the energy and cost savings. In addition, the Management Department is keeping track of how "vandal resistant" the fixtures actually are—as there is a potential maintenance saving in addition to the reduction in energy.

LOW-PRESSURE SODIUM VAPOR LIGHTING

Apace with the incandescent replacement program, the Authority is currently replacing outdoor incandescent or mercury vapor lighting with 55 watt, low-pressure, sodium vapor lighting. An important concern—tenant and police reaction to the yellowish light emitted by the bulbs—was surveyed at several projects after the installation. Satisfaction with the new illumination was general.

Tenant satisfaction is also general with respect to the appearance of the new lighting system. When this type of program (or any of the others described in this report) is proposed for an individual project, every attempt is made to fully inform all of the families at the development through flyers, posters or the like and through open meetings with the tenant association. This approach helps to secure not only approval for an individual conservation step, but also understanding and support for the overall need to conserve.

CONSERVING GAS

One of the major reasons for the Authority's opposition to the deregulation of the pricing of natural gas is suggested in the following table which outlines the increase in annual consumption of cooking gas per dwelling unit since 1973.

Between 1973 and 1982 consumption per dwelling unit increased by 9.6% while costs rose by 332%. The chart also shows that between 1979 and 1982, tenant consumption *decreased* per dwelling unit (13,791 cubic feet in 1979 to 12,637 cubic feet in 1982). The decrease may be due in part to the installation of electronic ignition gas ranges at projects and to an intensive publicity campaign to persuade tenants to stop using stoves for space heating purposes. A starkly dramatic flyer, printed in both English and Spanish (reproduced at right) was distributed to every family clearly outlining the dangers of this form of heating.

STOVE REPLACEMENT

The Authority has an ongoing program of replacing gas ranges in apartments as necessary. Since 1980, in accordance with State laws as well as HUD regulations, gas ranges with continuously burning pilot lights have been replaced with electronic ignition pilotless models. Although more expensive, analysis indicates that these units reduced annual cooking gas consumption by 23.7% for a yearly savings of $20.68 per unit. As the price of cooking gas rises even higher, more dollar savings may be anticipated.

However, due to the complex nature of electronic ignition ranges as opposed to the conventional pilot light models, higher maintenance and parts replacement costs may offset a part of the dollar savings realized through the reduction in cooking gas consumption. A Management Department study of this factor is underway.

COOKING GAS CONSUMPTION & COST 1973 -1982

Year	Consumption (Cu Ft)	Cost	Cost Per M/Cu Ft	Consumption Per DU/Yr Cu Ft	Cost Per DU/Yr Gas	Consumption % of Increase (or decrease)	
						Over 1973	Over Prior Year
1973	1,817,452,500	$ 2,916,100.69	$1.605	11.529	$18.50	—	—
1974	2,015,416,000	$ 3,563,011.23	$1.768	12.518	$22.13	8.6	8.6
1975	2,012,109,500	$ 4,586,336.08	$2.279	12,212	$27.83	5.9	(2.4)
1976	2,139,467,600	$ 5,813,260.49	$2.717	12.882	$35.00	11.7	5.5
1977	2,154,468,037	$ 7,069,925.00	$3.282	12.826	$42.09	11.2	0.4
1978	2,242,007,900	$ 7,888,129.59	$3.52	13.323	$46.90	15.6	3.9
1979	2,333,763,500	$ 9,556,195.23	$4.09	13,791	$56.41	19.6	3.5
1980	2,273,902,800	$10,944,004.51	$4.81	13.363	$64.28	15.9	(3.1)
1981	2,277,032,600	$12,246,418.94	$5.38	13.348	$71.81	15.8	(0.1)
1982	2,159,184,200	$13,659,962.47	$6.33	12.637	$79.99	9.6	(5.3)

REDUCING GASOLINE CONSUMPTION

The Authority has various programs in place to reduce gasoline consumption and increase vehicle operational efficiency. A motor vehicle specialist has been appointed as a coordinator to oversee the maintenance and care of emergency vehicles and to educate drivers in fuel-efficient techniques. Four-cylinder and smaller vehicles are being substituted for larger, less fuel-efficient models, diesel power equipment is being obtained for project use and scooters have been assigned to the Police to improve energy efficiency and mobility.

To further conserve gasoline, truck deliveries of supplies from the Authority's nine consolidated storerooms to projects served by these storerooms are now handled cooperatively. Each storeroom supplies a particular area of the city, and projects in each area alternate the truck assignments on a scheduled basis to pick up supplies in their respective areas. Cooperative truck deliveries have sharply decreased the number of trucks in daily service, resulting in a significant decrease in total miles travelled with attendant gasoline savings.

WATER CONSERVATION

As of this writing, New York City has experienced the "wettest" spring in years. City reservoirs are at, or near, capacity, and the whole subject of water conservation seems more than a little abstract. Even the shortest memories, however, can recall the drought alert faced by the metropolitan area in 1980-1981, a crisis which prompted the Authority to develop a successful and highly acclaimed water conservation program. Even as the city's supply approaches adequacy, the "SAVE WATER" program continues.

A huge "SAVE WATER" headline and the story which accompanied it in the "Housing Authority Journal," a bi-monthly newspaper written by the agency's Office of Public Information and distributed to each tenant at every housing project, was but one of many motivation spurs in the publicity campaign throughout the critical months. Apace with the written and visual campaign, the agency installed water-saving devices in all apartments including flow restrictors and water-displacing devices in toilets. In addition, plumbing teams were directed to immediately repair leaks and dripping faucets after a well-publicized effort to get residents to identify them. Finally, water meters were installed in the condenser make-up water lines of cooling tower air-conditioning systems.

It has been estimated that the continuing program has saved the Authority (and the city) about 276 million gallons of water per month, a 14% reduction in consumption. As a side-benefit, because less hot water is now being used, the Authority has saved more than $4 million in fuel costs.

To deal with the possibility of future water shortages, the Authority intends to promulgate contingency plans and establish an Authority Preparedness Committee which will interface with similar groups in other agencies.

TENANT/STAFF INVOLVEMENT

Informed and involved tenants and staff who understand the necessity of conserving increasingly expensive and non-renewable energy sources are major contributors to the success of the Authority's energy conservation program. Efforts to educate and motivate tenants and staff to use energy wisely and efficiently will continue to be given high priority.

This report has already demonstrated that tenant consumption increases have not accelerated as much as those of families living in the private sector. Nevertheless, as a November 1982 message from General Manager John Simon made clear, only greater cooperation from families will preclude harsh penalties from a new Federal requirement.

ELECTRICAL APPLIANCE POLICY

Continuing its longstanding policy, the Authority carefully regulates the kinds of appliances and conditions under which tenants are permitted to install electrical appliances in their apartments. The basic purpose of this procedure is to regulate the unrestricted use of these appliances and to collect charges for additional consumption of electricity. It has been shown that a system of charges fairly applied discourages the proliferation of many unnecessary appliances by tenants, as well as aids the Authority in meeting higher electrical consumption costs. In addition to charging for the installing of such appliances as air conditioners and dishwashers, it should also be noted that the agency forbids the installation of appliances such as clothes dryers and microwave ovens.

TENANT MOTIVATION

The collage of energy conservation materials reproduced on this and the following page of this report were culled from numerous back issues of the "Housing Authority Journal." That newspaper, as well as hundreds of tenant association and management newsletters published each year, repeatedly underscores the energy conservation message. In addition to highlighting the seriousness of the crisis, many articles and posters also offer practical advice on energy reduction steps. This is an effort in which management has the cooperation of many Tenant Associations.

STAFF MOTIVATION

Authority staff involvement covers a wide series of activities from a variety of training programs for technical and administrative personnel to actively encouraging submission of ideas for energy saving under our Employee Suggestion Plan. "Save a Watt", "Turn Me Off" and "Save Water" campaigns are in place and vigorously pursued. In-service training programs have been established to improve the technical skills of heating plant personnel, including instruction as to preventive maintenance procedures for saving fuel.

EXPERIMENTAL PROGRAMS (ACTIVE)

For the last decade the Authority has actively encouraged experimentation with, and application of, products and equipment developed to save energy and enhance maintenance capability. The following table describes active (as of mid-1983) programs.

ENERGY EXPERIMENTS (ACTIVE)

DESCRIPTION	CLAIMED SAVINGS	COST TO H.A.	DATE STARTED	COMP. DATE	RESULTS REMARKS
Device that analyzes the flame color and adjusts secondary air to optimize the flame.	From a minimum of 5% to a max. of 10%	$63,000	Not started to date.	One Year from start.	Previous test at Astoria Houses showed a positive 5% saving.
Device for treating boiler water without the use of chemicals.	5%—water treatment	0	Feb. 1983	Feb. 1984	The test boilers are not presently being treated by chemicals. Chemicals found to damage boiler push nipple gaskets.
A chemical that dissolves sludge and enhances the burning of fossil fuel.	5% + clean tank	0	May 1982 Boston Secor	April 1983	Showed some positive results but not to degree projected.
Same claims as above additive.	10%	0	Feb. 1983 Coney Island	January 1984	————
Heat to apartments will be regulated on actual apartment temperatures and outside temperatures through computers.	5%	0	Feb. 1983 2125 Glebe Ave.	Jan. 1984	This test is our indoctrination into the computer energy management field. The test showed dramatic improvements in first month of operation.
A device for increasing the percentage of negative ions in the combustion chamber.	5%	$7,500	December 1982 Bland Houses	Feb. 1983	The test of this equipment had negative results. Contractor has proposed another test at no charge to HA.

EXPERIMENTAL PROGRAMS (INACTIVE)

The reader may also be interested in a table outlining recent experiments which, for the reasons indicated in the last column, are no longer in operation.

ENERGY EXPERIMENTS (INACTIVE)

DESCRIPTION	CLAIMED SAVINGS	COST	DATE STARTED	COMP. DATE	RESULTS REMARKS
A device that introduces moisture into the primary air stream to prompt better atomization of oil.	10%	$5,200	3/16/82 Castle Hill Houses	9/82	The results of this test were negative.
A device for increasing the percentage of negative ions in the combustion stage.	5%	0	11/1/80 Tilden Houses.	4/82	Results of this test were negative. Contractor is no longer in business.
Fuel oil additive to enhance the burning of fossil fuels and dissolve sludge.	5%	$800	1/82 LaGuardia Houses	5/82	Test results were negative. Product requires special handling and storage because of low flash point.
Utilization of waste heat to raise temperature of condensate feed water.	5%	$114,222	Vladeck Houses	—	Constant problems with leak in heat exchanger coils in boiler breeching. System abandoned.
Utilization of waste heat to generate domestic hot water and raise temperature of condensate feed water.	10%/15%	$177,600	East River Houses 2/83.		System worked for short period of time. Sophistication of design makes this system difficult for the staff to properly maintain. (Possible restart of test in 1983-1984 heating season).
Shaped pieces of metal that are placed in the boilers fire tubes to slow down the passage of the hot gases through the tubes.	5%	0	11/81 775 Marcy Avenue	1/82	Results of this test test were positive. Test was performed on a non-typical boiler at contractor's request. Contractor has not agreed to make a similar test on a typical boiler.

SUMMARY AND PROJECTIONS

Significant energy cost savings and/or improved energy efficiency have been achieved during the ten year period covered in this report without compromising the Authority's primary objective of providing decent, affordable housing to low-income New Yorkers. On a goal by goal basis, the following paragraphs recapitulate the major accomplishments in fuel oil, electric and gas conservation as well as the areas of tenant/staff involvement in energy conservation and experimental conservation programs described more fully above.

FUEL OIL CONSERVATION

During the last nine years Authority conservation programs have had the net result of saving nearly 90 million gallons of fuel oil for a dollar savings of more than $44 million. The savings were achieved by decreasing consumption levels through strict temperature controls at all projects, computer monitoring of distribution and consumption, boiler plant modernization and an extensive weatherization program.

ELECTRICITY AND GAS

Authority efforts were key to State Legislature approval of a New York Power Authority petition to furnish electricity to governmental entities in downstate New York. Based on Con Edison rates, the switch to PASNY has saved the Authority $55 million. At current rates, the Authority pays 23% less monthly for PASNY service than it would for equivalent service from Con Edison. A computerized system now makes it possible for the agency to monitor consumption and cost at all housing projects. An ongoing program to replace incandescent light fixtures in halls, lobbies and stairwells (120,000 replacements thus far) with fluorescent lighting will result in a savings of 64 million kwh per year at a cost-saving of approximately $4.5 million.

The Authority has developed a full-scale campaign to reduce tenant consumption of gas, the cost of which (per dwelling unit) has increased 332% since 1973. Tenant consumption has decreased 8.4% since 1979. An ongoing stove replacement program has demonstrated savings of 23.7% per unit which, at 1983 price levels, produces a yearly savings of $20.68 per unit. Gasoline consumption is subject to stringent monitoring.

Authority tenants are not energy wastrels. Further, through intensive publicizing of the energy crisis, consumption levels hold well below national levels. The agency regulates tenant appliance use and applies charges to tenants with over-sized appliances. The recently completed computerization of the electric billing system now makes it possible to focus on over-consumption within individual buildings. Over the years, in compliance with HUD regulations, the agency has conducted cost-benefit analyses of individual metering for electricity. Findings to this point have demonstrated that individual metering would not be cost-effective. With pinpoint accuracy, the new electric billing system will assist the agency to move confidently to address specific over-consumption problems within the prevailing "master meter" system.

Staff involvement in energy conservation programs is mandatory. Staff are involved in a variety of incentive programs to increase energy and maintenance efficiency.

In addition to the programs outlined on pages 24 and 25, the Authority has experimented in the last decade with numerous other energy saving approaches. These include, but are not limited to, solar energy experiments, non-electric thermostat valves and fuel additives. A cost evaluation of the entire program is currently underway.

There is the potential for even greater energy savings in the Authority program. Complete energy efficiency could ultimately reduce operating subsidy requirements at the same time that operational efficiency could be significantly increased. Future cost savings will accrue as the agency continues to implement the programs described in the preceding pages of this report.

Computerization has made it possible to develop energy management systems per housing project for fuel, electricity and physical improvements. The agency is currently developing an energy management system for gas use. When fully operational, and interfaced with the oil, electric and weatherization profiles, the Authority will have a total energy profile of nearly 3,000 residential buildings. The potential for increased conservation and increased operational efficiency has never been greater.

Authority energy conservation efforts have brought the agency's per dwelling unit average of 139.3 million BTU's per year (actual) well below the national public housing average of 146 million BTU's (1981 figures). Consuming almost 7 million BTU's *less*, the agency nevertheless paid $415 *more* per unit for energy than the national average.

Victims of a market system in an area where costs will only escalate, the Authority will nevertheless continue to maintain and improve on its energy conservation and energy management performance.

ATTACHMENT C

BOSTON HOUSING AUTHORITY

March 15, 1984

Mr. Wayne Sherwood
Citizens Housing and Planning Association
7 Marshall Street
Boston, MA 02108

Dear Wayne:

Attached please find three lists of items which have resulted in Costs Beyond Control for three large PHAs. This information, provided by Ray Hensen of the New York Housing Authority, Jim White of the Minneapolis Community Development Agency, and Melvin Braziel of the San Antonio Housing Authority supplements the information forwarded to you previously regarding Boston Housing Authority's Costs Beyond Control. I hope that the attached will be of some use in CLPHA's efforts to secure Costs Beyond Control funding for the Federal Fiscal Year 1985.

If you have any questions concerning the attached material or desire any additional information, please do not hesitate to contact me.

Sincerely,

Jeffrey K. Lines
Assistant Administrator
for Fiscal Affairs

List A

COSTS BEYOND CONTROL OF THE SAN ANTONIO HOUSING AUTHORITY

1. Costs attributable to premium increases for Workmens Compensation. For FY 1985, the cost will be $50,000 in excess of the "PFS Allowable" cost.

2. Costs attributable to spiraling expenditures for Owner-Landlord-Tenant Liabilities (OLT). A growing backlog of tenant-initiated suits against the Housing Authority, will result in costs far in excess of those allowable by PFS Regulations for attorney's fees, legal settlement costs and insurance premiums covering OLT expenditures. Attorney's fees for OLT-related cases will be in excess of $25,000 of the "PFS Allowable" costs in FY 1985.

   Insurance premiums for OLT coverage for FY 1985 will exceed those rates paid for FY 1984 by $100,000. (This latter increase is due in large part to the enormous legal settlement costs incurred by the insurance company in recent years.

3. Costs attributable to a new hospitalization contract. The new contract provides coverage similar to that provided by last year's contract, but it will cost $87,000 (or 36.9%) more.

List B

COSTS BEYOND CONTROL OF THE MINNEAPOLIS COMMUNITY DEVELOPMENT AGENCY

1. Costs for installing security screens on second storey windows to protect tenants from robberies and vandalism.

2. Security costs for responding to incidents in elderly high-rise apartment complexes.

3. Costs attributable to federal and state laws and regulations, such as:
   a) Compliance with state energy code mandates, which impose stricter standards than those enforced by HUD.
   A $10,000 penalty per unit will be levied for dwellings that fail to meet state specifications.

   b) Costs incurred during the preparation of the CIAP application. Staff time used for undertaking cost/benefit analyses and preparing the back-up for this application will cost this PHA $50,000 in FY 1985.

   c) Compliance with a state law requiring bid bonds on all work contracted to private vendors.
   Bid bonds for small items, such as auto repairs, are not cost effective. Vendors must pay between $200 and $300 per job to obtain a bond guaranteeing their work. Repairs are tied up for several weeks, because of the ensuing red tape. As a result, the Housing Authority is often prompted to buy replacements for the damaged items to keep up with their day-to-day operations. Bid bonds also inflate the cost of repairs and preclude many small businesses (expecially minority enterprises) from bidding on the jobs at all.

4. Updating computer facilities to replace obsolete hardware and software.
   The PHA does not receive sufficient funding from HUD to maintain its data processing equipment adequately.

List C

COSTS BEYOND CONTROL OF THE NEW YORK HOUSING AUTHORITY

1. Costs attributable to the ongoing installation of window guards for all apartment units containing children 10 years old or less.
   For FY 1985, the cost will be approximately $100,000.

2. Public liability insurance costs for protecting the PHA.
   Premiums for public liability insurance coverage rose $24 million between 1978 and 1982. The PHA received only $4.3 million in "Costs Beyond Control" funding in 1982 to cover these expenditures.

   The inflation rate for public liability insurance coverage will once again outdistance the PFS inflation rate in FY 1985. The New York Housing Authority expects to incur an additional $1.5 million of costs beyond control for this insurance coverage in FY 1985.

ATTACHMENT D

OKLAHOMA CITY HOUSING AUTHORITY

April 13, 1984

The Honorable Warren Lindquist
Asst. Secretary of Public and Indian Housing
Department of Housing and Urban Development
451 Seventh Street, Southwest, Room 10,000
Washington, D.C. 20410

Dear Mr. Secretary:

The Department of Housing and Urban Development (HUD) authorized a news release on April 3, 1984, through the United Press International (UPI) and Associated Press (AP). This release outlined a HUD Inspector General summary report of audits conducted against 16 so-called troubled housing authorities, citing these agencies for poor management, shoddy maintenance, neglect of resident needs and the existing housing stock, high vacancy rates, and poor collection practices, among other things. The Oklahoma City Housing Authority was included as one of the 16 authorities mentioned.

An untold amount of damage has been done to the Oklahoma City Housing Authority through this news release, both nationally and at the local level. The impact on the morale of our work force, alone, has been tremendous, as well as credibility of management. A dedicated, caring Board of Commissioners, who give so freely of their time, are beside themselves with anger and disappointment since these events reflect upon the fine direction and policy developed by that group. I suppose the most frustrating aspect of the entire episode is that the comments did not apply to this Authority and should not have been so represented. In this regard, the only thing we were "guilty" of is that we were audited by the IG. We were not a "troubled" housing authority, as is verified in the audit, and our operation was not unsatisfactory, also verified by the audit.

In fact, the audit, itself, identified the Oklahoma City Housing Authority as operating in an economical and efficient manner, and with a staff knowledgeable of program requirements, making a determined effort to properly manage operations within financial constraints, maintaining dwelling units in a decent, safe and sanitary manner, and aggressively pursuing rental collections, with effective administrative controls. These are audit findings, not our comments.

Three people from the IG devoted over 100 days toward the audit of the Oklahoma City Housing Authority, producing three minor findings. One of these findings was corrected and evaluated before the IG team departed; one was generally not concurred in by the Authority, with our response accepted; and one defect was in work prior to the team arrival.

Quite in contrast to the news release comments, the Oklahoma City Housing Authority is not a "troubled" authority and has not been since 1981. For three years now, we have recorded a healthy occupancy rate of 97-98%. Our rental collection rate has exceeded 98% for the same period. Maintenance is effective, meeting or exceeding private market response time while averaging less than 60 vacant units at any given time, and with an extremely low work order backlog. Management is effective, increasing per unit month income for twenty-nine (29) consecutive months. This has allowed us to reduce operating subsidy requirements from a high of 51 percent of the total budget in 1981 to 47 percent in 1982, 37 percent in 1983, and 22 percent during the current year. Significantly, this is a savings of some $660,000 to the Department in operating subsidy requirements. Between 1979 and the end of 1982, some 126 personnel spaces within the Authority were eliminated. Through all of this, resident quality of life has been improved. Poor management? ... I think not!

3. Costs associated with the replacement of plaster ceilings in improperly constructed developments.
   "Popping ceilings" is an ongoing phenomenon in the NYHA. Plaster-on-concrete ceilings are falling apart, so they have to be replastered and re-painted. The NYHA expects to pay $2.5 million to replace "popping ceilings" in FY 1985.

4. Costs attributable to state and local laws and regulations, such as:
   a) Compliance with local law #14, which forced the NYHA to upgrade incinerators and to install compactors.
      The ongoing maintenance of that equipment will cost that PHA $1.0 million in FY 1985.

   b) Compliance with City Council elevator codes.
      Extensive maintenance and upgrading of the NYHA's 3000 elevators will cost $1.0 million in FY 1985.

   c) Compliance with smoke detector law.
      Ongoing maintenance and replacement of smoke detectors will cost $150,000 in FY 1985.

   d) Compliance with a local law requiring window stops in all public windows.
      This health regulation has experienced many pitfalls. Previous window stops have been subject to extensive vandalism. A new installation arrangement devised by the NYHA will protect the window stops, but at a cost of $1.0 million in FY 1985.

5. The New York Housing Authority will also seek "Costs Beyond Control" funding so that it may comply with local laws regarding the following items:
   Asbestos Abatement
   Sprinkler Systems
   Fire Alarms
   Scrubbers

This performance has been achieved in spite of 85.5% of authorized subsidy funding in FY-81; in spite of supplemental funding for FY-81 appropriated by Congress in November, 1981, but withheld by HUD until June, 1982; in spite of any subsidy funding for FY-82 delayed until June, 1982, six months into the fiscal year, and then for only the first two quarters at 75% of FY-81 budget; in spite of the FY-82 operating budget being approved by HUD on December 15, 1982, eleven months and fifteen days into the fiscal year; and in spite of the FY-83 operating budget not being approved until six (6) months into the budget year. We, at this point, still do not have an approved FY-84 budget. In short, the Oklahoma City Housing Authority has achieved some management and fiscal stability against some pretty harsh HUD-generated actions through effective management dedication, decision and action, NOT through mismanagement and poor planning as suggested in the news release.

The willingness you and Undersecretary Abrams displayed in discussing this subject last week during the Council of Large Public Housing Authorities meeting is much appreciated, I assure you. The additional news release developed as a result of those talks has been of considerable help, although additional media coverage has been difficult to obtain. Equally importannt, the Oklahoma City HUD Field Office and the Fort Worth Regional Manager have been completely supportive, and we do appreciate their efforts as well.

Perhaps there are several points that should be made from all this. Foremost, of course, is that the Oklahoma City Housing Authority is not a troubled authority and its management and operations are more than satisfactory. Secondly, the April 3, 1984 news release should not have been issued in the format presented, and certainly not without the information being checked for accuracy. And finally, it is illogical to assume in this day and age that the IG is not answerable to someone for accuracy of content and assumptions made in reports issuing from that office. As you may remember, there was some discussion on this particular area during the CLPHA meeting.

Mr. Lindquist, I realize some of this is old hat by now, and that probably everything has been done that can be done to correct the error. Nevertheless, we still stand convicted within this community of poor and ineffective management, a concept that will take time to change. Regardless of what we say or do at this point, the very real damage is done. IT SHOULD NOT HAVE HAPPENED.

Your understanding of our frustration and anger will be appreciated. Again, thank you for meeting with us and discussing the matter.

Respectfully,

Jack Womack

Jack G. Womack
Executive Director

Louis F Danforth

Louis F. Danforth
Chairman, Board of Commissioners

STATEMENT OF CHARLES L. EDSON, COUNSEL TO THE NATIONAL LEASED HOUSING ASSOCIATION

Senator GARN. Next is Mr. Charles Edson, National Leased Housing Association.

Mr. EDSON. My name is Charles L. Edson of the Washington law firm of Lane & Edson, P.C. I am counsel to the National Leased Housing Association on whose behalf I am testifying. With your permission, Mr. Chairman, I would like just to talk briefly and submit this testimony for the record.

Senator GARN. Certainly.

Mr. EDSON. The National Leased Housing Association, as you may have recalled, was formerly the spokesgroup for the section 8 program. I guess by necessity, we have broadened our interests, and we are concerned with all of rental housing, especially for low- and moderate income Americans. These are the issues we want to talk about today.

There still is a section 8 program around, and that is the section 8 existing program. It has been a very good program, and we applaud its concept, which is utilizing our existing stock to the extent possible to house low-income Americans.

We think that it makes sense, very much sense financially, to limit your production and to target that to a different market and to utilize our present good stock for lower income families. That is what section 8 existing does.

That is what the voucher program does, too. We have no philosophical objections to the voucher, as such. We think it is just a label like certificate is a label. As we used to say back in Missouri, "Call me anything you want as long as you call me in time for dinner."

I think there has been a very silly argument over vouchers versus certificates. That is not the issue.

What we object to is how the voucher would be administered, with only two rental pieces in 5 years and with relatively lower payments to landlords, because we don't think it will get landlords into the program. When the Congress wisely, your other committee, wisely wanted to limit vouchers to 15,000 units to see if they would work, we all applauded that as a very good compromise last year.

When we find in the budget 85,000 units for vouchers or this new style program, I must say that is some demonstration, or at least a demonstration obviously that must have succeeded very quickly. We think that is wrong both as a matter of housing policy and wrong as a matter of congressional and administrative relations, and we hope that the funding for existing housing be in the section 8 existing program which is a tried and true program rather than the voucher variation which has weaknesses to which I have alluded.

We have other comments in our testimony that I know you have heard about. One is the lowering of administrative fees for the section 8 and voucher program which make it very difficult for the local authorities, and the other problem is the recapture problem that Mr. Simon so well pointed out, especially in the public housing pipeline. They are trying to snuff out, I believe, what little life remains.

I finally would like to address an item which is really not before you, but just to alert you that there is a new production program. It is very modest in amount—$200 million this year, $115 million next year. It is a locally oriented program. It puts a lot of risk on the private sector, and your committee, certainly the Banking Committee, is to be commended for authorizing that program last year.

We have found already, Senator, a lot of interest in this program. I personally chaired five seminars in different parts of the country that were virtually oversubscribed. Maybe it is because developers don't have anything else to do, or maybe it is because there is a lot of inherent interest in it. I know that there will be a lot of good applications, and for a relatively small amount of money, we will be increasing our housing stock, which is so necessary to make any program, voucher program or existing program, work.

I hope that after the applications are in and after you have seen what the demand is in the September round, that you might consider, in a supplemental appropriations bill in the fall or next spring, more money for this program for fiscal year 1986, because we think it is a good program. It is a local program. I must say I was disappointed when I read the draft deregulation program; 68 pages going into minute detail. I think we had an administration to fudge deregulation and local initiative and was somewhat sorry to see this program billed as such being nationalized again.

I want to join the procession of dumping on HUD, which I think has done a good job so far with its program, but I must say, however, I was disappointed. I hope you will keep in mind more appropriations for it. I want to thank you again for this opportunity to appear before you.

Senator GARN. As I'm sure you know, Charles, there are some Members of the Senate, who I won't name today, that don't share your view of section 8 and the way it has worked and the expense of the program.

But I would like to comment on your reference to the public housing pipeline. The subcommittee's understanding of the Department is that processing delays that have been caused by HUD or litigation delays that have occurred since May 1983 will not be held against the housing authorities in determining the construction deadline. At least that is the understanding that we have.

Mr. EDSON. We very much appreciate the efforts you all have taken on that score. Let me say that section 8 was a fine program. It just cost too much money, so I share that view.

Senator GARN. Thank you very much.

Mr. EDSON. Thank you, Senator.

[The statement follows:]

STATEMENT OF CHARLES L. EDSON, LANE & EDSON, P.C., COUNSEL, NATIONAL LEASED HOUSING ASSOCIATION

My name is Charles L. Edson. I am a member of the Washington law firm of Lane and Edson, P. C. and Counsel to the National Leased Housing Association, on whose behalf I testify today.

The National Leased Housing Association represents more than 750 member organizations involved in multifamily rental housing -- public housing authorities, developers, managers, not for profits, financiers and syndicators. All of our members share an overriding concern with the provision of rental housing for low and moderate income Americans. It is this concern which brings us before you today.

Our primary purpose here today is to urge this Committee to reject the plan contained in the Administration's FY'85 assisted housing budget to convert to a full voucher program and to instead appropriate funds supporting the same programs contained in last year's appropriations bill. Just last year the House and Senate banking committees rejected a change to a full voucher program by providing for only a demonstration program of 15,000 units in their authorizing legislation. For HUD to request a total voucher program while Congress and the public have yet to even see the regulations to govern the demonstration program is to usurp their legislative mandate.

While the debate continues over the need for increasing the supply of rental housing stock in this country, NLHA continues to maintain the position that there is indeed a shortage of affordable rental housing for low and moderate income families. To meet this end NLHA endorses, as we have in the past, the continuation of the successful Section 8 existing program. The assistance payments which will go to needy families under the voucher program (based on the difference between a newly established payment standard and

30 percent of adjusted tenant income) will result in an average yearly reduction of close to $2000 per family from assistance received under the Section 8 existing program. This decrease will greatly diminish the chances of low income families to find affordable rental units which at least minimally meet the standards of decent, safe and sanitary housing.

The demonstration voucher program was authorized as an experiment to be examined. We have yet to see how the system will or will not work in areas with tight rental markets or how public housing agencies will be able to administer with some degree of equity the payment standard increases (allowed twice during the five-year contract period) which under the program will be left to PHA discretion.

NLHA believes that the best way to house lower income Americans in decent, safe and sanitary shelter is to utilize existing stock when possible and that to replace a program successfully housing more than one million low and moderate income families is most unwise. The Section 8 existing housing program has proven to be the most cost effective and efficient housing program in the history of government assisted housing. We urge this Committee to appropriate funds for at least 56,000 new existing Section 8 certificates, as contained in last year's legislation.

Administrative Fees

In line with this proposed switch to a voucher program, HUD is currently planning a change in the fees PHAs receive for administering the existing Section 8 program which would increase by $5 the maximum up front fee paid to a PHA for new tenants but would at the same time reduce the monthly fee from 8.5 percent to 6 percent of a two-bedroom fair market rent. Many agencies would lose a great deal of money through this fee change causing tremendous hardship. We would hope this change is not being undertaken in order that the voucher system seem more palatable to PHAs.

We would ask this Committee to recommend that an independent study of the existing Section 8 fee structure be undertaken to determine fair fees for this program and the demonstration voucher program.

Production Funds

As we alluded to earlier, a shortage of affordable rental housing stock for low income people does exist. For this reason we urge this Committee to fund the Section 202 program at a level of at least 14,000 units and to consider an additional appropriation of funds for the rental development grant program to bring the FY'85 level up to at least the FY'84 level. While regulations for this program are just seeing the light of day, there has been a tremendous amount of interest expressed in this program. It appears that the $200 million and $115 million allocated for FY'84 and FY'85 respectively will not be enough. We urge this Committee to keep a watch on program developments; it would be most disadvantageous for the funding level of the program to begin to be diminished just as it begins to produce badly needed units at a very low cost to the federal government.

Public Housing Pipeline

In connection with the need for further affordable housing production we urge this Committee to direct HUD to grant public housing preconstruction pipeline extensions beyond the deadline set forth in HUD Notice 83-20 if it is determined that the processing delays have been the fault of the HUD area offices and that the area offices have not adhered to the standard processing times established in HUD Handbook 7417.1 Revision #1.

HUD had assured this Committee a little over a year ago that if a project was determined to be viable that every effort would be made to bring it to a construction start. Our members have informed us that this has not always been the case. We urge that an objective review be made of these projects to determine their viability, and if it is found that a project can be brought reasonably to construction that a waiver be granted and processing be continued. These projects, which have already been budgeted for, will produce badly needed units for low income families.

In summary, the members of the National Leased Housing Association feel that we are endorsing proposals that provide a badly needed enhancement to our rental stock and provide additional units for low and moderate income families.

It is always a pleasure for us to appear before the Committee and we thank you for the opportunity to do so today.

STATEMENT OF BROWN NICHOLSON, VICE PRESIDENT FOR LEGISLATION, PUBLIC HOUSING AUTHORITIES DIRECTORS ASSOCIATION

Senator GARN. Mr. Joseph Laden, President, and then is Mr. Brown Nicholson with you today.

Mr. NICHOLSON. Senator, I am Brown Nicholson.

Senator GARN. You are Brown Nicholson. Mr. Laden is not here?

Mr. NICHOLSON. Mr. Laden is detained in La Guardia with a fogged-in airplane. If you will permit me——

Senator GARN. I understand that problem. That has happened to me before. Please go ahead.

Mr. NICHOLSON. Thank you.

Senator, I represent the Public Housing Authorities Directors Association and serve currently as its vice president for legislation. We share Mr. Edson's concern about administrative fees and the section 8 program, as you can imagine, and also Mr. Simon's concern about HUD's recapture initiatives.

Unfortunately, I did not get a chance to hear all of Mr. Simon's testimony and I may repeat some of it, if you will pardon my doing so.

One of the things that PHADA is concerned about is the production of the conventional or traditional low-rent public housing program. We note that the production goal has been reduced now to 5,000 units and a limitation placed on that that it must be demonstrated to be cheaper than rehabilitation.

Our position on this subject is shown in our written testimony, and it is that we would like to see that limit doubled for this year. Some of the other interest groups have suggested that it be tripled. In any event, we feel that the traditional low-rent public housing program is still the best way to house the low income families of America. Until something better comes along, we urge you to continue to keep at least a token program going in that very important area.

Another one of our concerns is the whole issue of pets in high-rise units, a great deal of which correspondence has been passed back and forth to the distinguished colleages on this committee—take blame for most of those problems.

We do feel that there is a cost item involved in this and that it is going to require additional operating subsidies to maintain that position that the Congress has put us in of allowing tenants to keep pets.

The prospect of more than one dog in an elevator in a high-rise structure for the elderly causes us great anxiety. We, of course, would love to see that provision of the authorization Act repealed.

Last year, Congress came up with a new rent formula. We did a quick survey in the southern part of the country where I come from and in 10 States, and the example included over 58,000 families. Without boring you with all the numbers which are in our written testimony, let me summarize all that by saying that it resulted in an average of about $1,000 per year per housing authority increase in income; somewhat less, I think, than HUD had anticipated when they prepared the budget, and included a figure for operating subsidies for this year.

Consequently, we feel that at least as much operating subsidy will be required to operate the public housing program in 1985 as is available in 1984. The major success story, in our opinion, of the public housing program in the recent past has been the CIAP or the modernization, if you please.

The reason for the levelling off in the cost of operating public housing and the fact that we feel we can get by next year with no more than was required this year is the success of the modernization program, and particularly the energy initiative portion of it.

We hope that the Congress will continue this program for several years to come and urge you in considering the current supplemental appropriations bill to keep an eye on those rascals over on 7th Street and be sure they hand out all the money that you gentlemen have so kindly appropriated for this purpose.

We are concerned about the fact that HUD seems to be holding up some $400 million and not making it available to the field. In my own home State of Georgia, it was in excess of $30 million available last year. This year, less than $16 million is being distributed to the housing authorities for this same purpose, and yet the Congress appropriated more money this year than it did last year.

We are concerned about where the difference is and when and if it is going to be distributed to the field.

I might add that this, of course, is true not only in Georgia but in all of the other States, as far as I know, where Florida has precedence.

We would also commend to the study of the committee the report by GAO last January which suggested some ways of strengthening management activity at HUD. Those items are also tabulated in our written testimony, and I simply mention them in this oral testimony for the purposes of emphasis.

Finally, we would like to ask you to remember HUD's promise to alleviate some of the paperwork burden. Some housing authorities require more supervision than others for various reasons, quite a few of which are not their responsibility entirely. We are concerned that there has been all of this talk about deregulation and very little reality about it. We think that some housing authorities can operate their own programs with a lot less supervison and that HUD should devote the majority of its time to those who are having problems.

We appreciate this opportunity, Senator, to appear before the committee and to give our testimony. I apologize again for Mr. Laden's absence and appreciate your understanding that he was delayed by the weather.

Senator GARN. As one who has had to put up with the Eastern shuttle back and forth from New York for 10 years, I fully understand his frustration in not being able to get out of La Guardia. Just 2 weeks ago it was the reverse. I was trying to get from here to New York and was fouled up in New York. So we sat on the ground at National for an hour and 45 minutes after leaving the gate for the 40 minute flight to New York. I have had it in both directions.

Mr. NICHOLSON. It promises to be bad going back to Atlanta, I'm sure.

Senator GARN. Your comments about the uncertainty of the new rent formula on PHA income are certainly well taken. The subcommittee doesn't intend to reduce operating subisides in anticipation of additional tenant rent income projected by HUO, if their estimates are uncertain. Thank you very much.

Mr. NICHOLSON. Thank you very much.

[The statement follows:]

STATEMENT OF THE PUBLIC HOUSING AUTHORITIES DIRECTORS ASSOCIATION

The Public Housing Authorities Directors Association, a professional assocation of 650 public housing authority executive directors from throughout the United States, is appreciative of this opportunity to present our views on the HUD program for federal fiscal year 1985.

In an effort to rationalize the rapid withdrawal of federal support to local efforts to provide better housing for the poor, the Administration has promoted the thesis that affordability is the problem not availability. And yet the census shows that in 1981 900,000 occupied dwelling units were overcrowded. In 1981 2.5 million dwelling units lacked adequate plumbing or heating. When you add to that the new low-income families entering the market during the two subsequent recession years and subtract only the few new affordable units built in 1982 and 1983, there must be much more overcrowding and substandard housing today.

The overcrowding numbers define the unavailability problem and yet the current budget proposal fails to offer a solution. Instead, based on a demonstration that has yet to produce regulations, much less habitation, we are offered a bunch of vouchers.

Fortunately the housing leadership in the Congress has not been taken in and is proceeding with its own budget and appropriations. This leadership, and rightly so, is not willing to abandon workable production methods in favor of experiments. The two new measures, Rental Rehab and Housing Development Grants deserve a chance, but meanwhile back home, thousands of your constituents are without a decent place to live, are doubled up and living in slums.

Pending the outcome of current experiments, existing programs must continue. Congress provided 5,000 units of public housing in 1983 legislation. This should be doubled this year. The traditional low-rent public housing program is still the best way to house low-income families. Most of its problems are the result of ill-advised tinkering.

For instance, last year Congress decreed that we must allow elderly tenants to keep pets in their apartments. We were left to our own devices to pay for the inevitable damages. This provision should be repealed outright. Should it remain intact, Congress and HUD must appreciate the costs of initiating such change.

Last year Congress came up with a new rent formula. A quick survey of 42 Authorities in 10 Southeastern states was made. This example included 58,638 families. To give these 42 housing authorities a net average gain of slightly more than $1,000 each a year, you increased the rent paid by 22,117 elderly by $874,410 and increased the rent paid by 18,671 workers by $613,591 and decreased the rent paid by 17,850 ADC families $1,417,382.

Based on this and other anticipated increases in income plus expected decreases in costs, HUD wants to rescind some of this year's subsidy and proposes an 18% cut for next year. Needless to say industry projections are not nearly so optimistic. It is safe to say that we will need at least as much operating subsidy in 1985 as appropriated for 1984.

Recision only makes sense as a political move. We can receive no more than the formula will permit. There can be no windfall. If in fact there is a surplus in '84, it will carry over to '85 et seq.

HUD's FY 1985 estimate is based on several doubtful assumptions: (1) a low estimate of 2.4% increase in utility costs (2) recapture of excess PHA income, a change of the type that Mr. Stockman promised Senator Garn and Mr. St. Germain would not be made this year, (3) higher rent from the new formula which in fact will make little change.

The Appropriation bill should bar HUD from recapturing so-called excess income from past years by reducing current operating subsidies, unless a PHA violated an applicable HUD regulation. HUD, we believe, agrees with our position but is being pushed by an Inspector General recommendation to recoup any income a housing authority has received beyond that in its HUD-approved budget. Such action is without basis in regulation, contradicts historic practice, removes all incentive for increasing PHA income (which reduces subsidy in the ensuing periods) and retroactively penalizes present operations.

Underestimates were approved by both independent public accountants and HUD field offices. Recapture of interest will force a large number of PHAs to severely reduce their reserves and place many authorities in troubled financial status. PHAs have already spent the funds on qualified modernization improvements and special maintenance. PHAs should be rewarded and not penalized for being prudent and successful investors. HUD field staff had, at times, promoted underestimates; interest forecasts were virtually impossible in view of recent year financial market volatility; and, finally, a change in HUD policy would be viewed by PHAs and the general public as a vote of confidence by the Administration for better management of public housing.

Local authority modernization efforts is a major success story of the public housing industry. Modernization (CIAP) is beginning to pay off. This pay off is the cause of the "leveling off" of the increases in operating subsidy needs. Congress must continue funding of this program to protect its investment. It would be foolish indeed to stop short of completion when the end is so near.

Congress must be watchful to ensure that HUD follows Congress' intent, originated in this Subcommittee, to allocate to the field all of the original $1.55 billion FY '84 CIAP appropriation. Withholding almost 1/3 of it in the national office threatens elimination of funding for some comprehensive modernization projects in favor of piecemeal emergency and limited purpose work.

There is a bill (HR 3022) pending in the House that deserves your support. This bill would open previously closed sources of income information and assist us as we try to verify tenant statements of income (on which we base rents) and thus prevent fraud. Some local housing authorities are having trouble with release of social security and unemployment income information and are thus at the mercy of sometimes conniving tenants.

There has been some bad press lately aimed at local housing authority operations. Much of this originated with press releases at HUD about findings by HUD's own Inspector General. The press release and subsequent coverage did not deal with the fact that the IG blamed HUD's own management for many of the local problems.

In January GAO concluded that HUD could improve its operations by strengthening:

1. General management functions including organizational structural;
2. Planning;
3. Staffing;
4. Financial management;
5. Program monitoring.

GAO went on to say "While HUD has begun to address some of its problems, success will be elusive unless the Congress and HUD address what GAO believes are basic underlying causes of managerial difficulties." There is a need to:

1. Build an organization with greater stability;
2. Place more emphasis on general management functions;
3. Strengthen accountability for general management functions;
4. Establish continuity within HUD's top management team.

Hopefully GAO's recommended:

1. Long-term maintenance and replacement reserves;
2. Multi-year funding;
3. Program continuity;
4. HUD management improvements.

will be taken seriously by the Congress.

Finally, we would like to remind both Congress and HUD of their stated commitments to alleviate the excessive paperwork burden borne by PHAs. Regulation best serves those in need of assistance and guidance. Well managed PHAs should earn their freedom from unnecessary regulation. HUD should concentrate on poor managers and eventually de-regulate more of them. Managers need incentives and rewards for good managment and unfortunately, the present system does not now appreciate this basic tenet of sound management.

Our members will always be available to work with Congress on all efforts to produce liveable home environments for this nation's low and middle income families.

Thank you.

STATEMENT OF MELVIN J. ADAMS, SENIOR VICE PRESIDENT AND DIRECTOR, DADE COUNTY, FLA., DEPARTMENT OF HUD, ON BEHALF OF THE NATIONAL ASSOCIATION OF HOUSING AND REDEVELOPMENT OFFICIALS

Senator GARN. Mr. Melvin J. Adams, senior vice president and director of the Dade County Department of HUD, on behalf of the National Association of Housing and Redevelopment Officials.

Mr. ADAMS. Mr. Chairman, I would like to introduce my testimony into the record and make some brief remarks.

Senator GARN. It will be included in full.

Mr. ADAMS. First, I would like to say I have been in this business 30 years, and there have been giants in the Congress who have helped the program move along. I don't think any of them have done any more for the program than you have. These have been very difficult times for us. We know that the budget is a problem, and we suffered our share, maybe more than our fair share.

Senator GARN. There is no doubt it would have been easier to be chairman in some previous years than the last three.

Mr. ADAMS. But I think in terms of keeping free of the nickel-and-dime and penny-ante shackles that we are trying to be put in the housing and redevelopment program, your leadership has kept the program on at least a sensible level, and everyone in the business is grateful to you and respects what you have done. Obviously, it is nice to say it. It happens to be true, also.

Senator GARN. Thank you.

Mr. ADAMS. We feel that in the field of community development, the program has not had any budget cuts, but the dollar level has stayed at the same level for 3 or 4 years. Inflation has eaten away much of the value of that money. New communities have been added in terms of entitlements, populations have grown, and new activities have been added.

We think we would like to see a slight increase in the appropriation for community development and for the urban development action grant program for the same reasons.

Every year we come to you and ask that the section 108 program, the 312 program, be continued, because our Federal friends always propose to cut it. The Congress, in its wisdom, has continued the program in operation. They are two very important components of community development. We certainly hope you continue them for another year.

In terms of the section 8 program, the section 8 existing and moderate rehabilitation programs have been very successful. We know that there is a new demonstration voucher program which had some similarities to the section 8 existing and some differences. We think that program should continue as a demonstration and not replace two very successful programs.

We also are concerned, and we were developing some data from our members, about the administrative fee that has been considered by HUD—a reduction in the administrative fee. Our gut reaction is that a reduction is not justified, but we want to have some data on which to support or modify our gut reaction. When we get that data, we would appreciate the opportunity of submitting it to you for your consideration.

In terms of public housing, NAHRO, as usual, comes before you and says, "We need this; we need that; we need the other." You sit up there and listen to everyone who needs everything, and you may sometimes wonder, "What are they doing for themselves," because there are some things each of us can do. Public housing, by and large, is well managed. I would be happy to compare the management of public housing with that of privately subsidized housing and private unsubsidized housing. But each of us can do a better job, and if we have any pride in what we are doing, we go back home in our community and try to do a better job.

NAHRO, as an organization, has developed a proposal to eliminate a lot of the Federal review, have the local authorities proclaim or certify certain things as having been done, and let the agencies be postaudited. We think this would cut down on a lot of paperwork, cut down on the cost of the Federal review without adversely affecting the quality of the program. We submitted our recommendations to Assistant Secretary Lindquist, and he and his staff are reviewing them.

Similarly, we think we need to develop some performance guidelines, standards, whatever you want to call it, that public housing authorities can look at, adapt to their local needs, and set the professional standards for measurement, measurement from the outside and measurement from within our own agencies.

Those NAHRO recommendations will probably be available late this year or early next year.

There are a couple of other things that are of concern to us. Recently, there have been two inspector general reports. One of them recommended a recapture of excess rental income and other income over the past couple of years. We know that you have expressed your concern with that to the administration and, hopefully, they will only recapture income if it is clearly shown that there was deliberate mistakes or mathematical errors of great magnitude.

But the administration, HUD, is also talking about in the future, at the end of each housing authority's budget year, to review their income projections, and if more income was earned, cut the operating subsidy, if less income was earned, increase the operating subsidy to make them whole.

I think that is a formula that is fraught with real danger because if our income, in effect, is limited, and expenses are not controllable, and we may have a year when our income is a little higher than budgeted or our expenses are, too. If our income keeps getting reduced to the budget figure, we will eventually go into the hole. So there needs to be an incentive to work hard, to make more income, to save for a rainy day.

Of even more concern to NAHRO, and most of the other organizations in the housing field, was the inspector general's report on 16 so-called troubled housing authorities, indicating that they were mismanaged and had very serious problems. That report was issued by the HUD inspector general, and HUD put it out in a press release. There was no current review of the facts concerning those 16 authorities. Subsequently, HUD found that some of them were not mismanaged, were no longer troubled, that the data that was in the inspector general's report was 2, 3, 4 years old, and was no longer valid. The very fact that that report was issued cast a cloud over public housing authorities throughout the country because it was given wide public dissemination as reflecting the quality of public housing management.

We think that report did a real disservice to the program, and frankly, many of our members question the motives of HUD in releasing the report without having checked the facts and giving the local authorities the opportunity of responding to the report, which is a typical audit practice.

Finally, let me comment on one HUD regulation where we have a hidden bomb ready to go off that can seriously affect the financial feasibility of public housing. In the late 1970's, HUD issued a regulation on utility allowances. The regulation said that the utility allowances have to be set so no more than 10 percent of the tenants are using more than the allowance. This is an invitation to wasted energy, because the more the tenants use, the higher the allowance goes. It is certainly inconsistent with the Congress' stand a year or two ago that if energy was not conserved, there would be a penalty in the performance funding.

Early in the Reagan administration, in 1981 I guess it was, the Vice President was put in charge of the Deregulation Commission. This utility allowance was one of the two HUD regulations that were going to be deregulated. In 1982, HUD came out with a proposed rule that would have permitted each housing authority to set the utility allowances based on reasonable usage. Generally, it was a good regulation. It still hasn't been published.

Three years ago, we, in Dade County, analyzed what the present regulation, what effect it would have on it. It would have required a 20-percent increase in our operating subsidy to cover the $1½ million of extra utility costs. There have been some court cases recently that told housing authorities that they had to use the rate that exists. I would urge, Mr. Chairman, that you call on HUD to publish that new regulation at the earliest possible time so that we can set a sensible utility allowance policy.

I would be happy to answer any questions you have or to expand on anything I said.

Senator GARN. Thank you, Mr. Adams. We appreciate your testimony.

The subcommittee, and I personally, have enjoyed working with NAHRO in the past. We look forward to having a continued close working relationship in the future. Thank you very much.

[The statement follows:]

STATEMENT OF MELVIN J. ADAMS, SENIOR VICE PRESIDENT, NATIONAL ASSOCIATION OF HOUSING AND REDEVELOPMENT OFFICIALS

Mr. Chairman and members of the Subcommittee, I am Melvin J. Adams, NAHRO's Senior Vice President and Director of the Dade County, Florida Department of Housing and Urban Development.

Founded in 1934, the National Association of Housing and Redevelopment Officials is this year celebrating 50 years of service to housing and community development, 50 years of progress toward a better America. NAHRO is a non-profit organization serving local public housing authorities, community development agencies and individual public and private sector prorfessionals in the housing and community development fields. We represent over 5,000 individuals and 2,000 agencies in localities all across this country.

I appreciate the opportunity to appear before you today to comment on fiscal year 1985 appropriations for housing and community development programs.

Mr. Chairman, my statement will be divided into five areas. No priority should be inferred from their order.

- First, I would like to present NAHRO's general reaction to the Administration's fiscal year 1985 funding proposals for housing and community development.
- Second, I would like to comment specifically on proposals for funding the Community Development Block Grant, the Urban Development Action Grant, and other community development programs.
- Third, I would like to state NAHRO's view on the case for continuation of the Section 8 Existing and Moderate Rehabilitation programs at adequate funding levels.
- Fourth, I would like to call the Committee's attention to the need to preserve the existing public housing stock, and provide for new public housing production.
- Fifth, I want to urge full funding of the new multifamily construction and rehab programs, and urge your support for continued public housing production.

Before commenting on fiscal year 1985 appropriations levels, I would like to commend this Subcommittee for rejecting the Administration's proposed rescission of public housing operating subsidies.

I. THE ADMINISTRATION'S FY85 FUNDING PROPOSALS

NAHRO believes that the drastic and disproportionate cuts made in housing and community development programs over the last few years have brought them to the brink of destruction. The promise of "a decent home and a suitable living environment for every American family," proudly proclaimed in the Housing Act of 1949, is beginning to sound hollow. Thanks to this Subcommittee, and the Congress as a whole, many programs have been kept alive, but many only barely. NAHRO believes that it is time to reverse the destructive trend of the last few years, and redeem the national commitment.

Our Association has carefully analyzed the proposed HUD budget for fiscal 1985, and has specific recommendations to make. A table summarizing those recommendations is attached. In presenting these recommendations, NAHRO would like to emphasize that the program area most seriously damaged by cutbacks since 1980 has been HUD-assisted housing - a 63 percent reduction in new budget authority over the five fiscal years 1980 through 1985. This has been accomplished by the drastic curtailment of any federal assistance for construction/substantial rehabilitation of lower income housing. The

Administration proposes to further curtail this level of support for FY 1985 to $5.3 billion in new budget authority -- a drop of 44 percent over FY 1984. Except for funding of the new production and rehab grant programs authorized in 1983, the Administration's 1985 HUD budget would continue the dismantling of all of the Department's assisted housing programs. (The new production program serves only a small proportion of lower income families). It holds at current levels the budget for HUD's Community Development Block Grant (CDBG) and Urban Development Action Grant (UDAG) programs.

For FY 1985, the Administration's budget for HUD proposes:

- To reduce dramatically construction of new assisted housing, and move to a system of vouchers based on available vacancies in the existing housing supply. The intent to substitute the voucher "demonstration," authorized in the 1983 Housing Act, for the Section 8 Existing Housing Program in FY 1985 is based on the unproven assumption that there is an adequate supply of housing for low-income families; it attempts to convert a demonstration into a full-fledged program without specific authorization.

- To hold static the funding for Community Development Block Grants (CDBG), UDAG, and Urban Homesteading -- this action in the face of an expanding number of participating communities and 4 to 5 percent inflation rate.

- To eliminate some programs -- the Section 312 Loan Program, GNMA Special Assistance, Section 108 Loan Guarantees, Congregate Housing Services, the Section 235 Homeownership Program, Housing Counseling Assistance, and the Solar Energy and Conservation Bank. No new funding is requested for these programs in FY 1985.

- To continue the conversion of units in HUD's long-term housing programs (Section 236, rent supplements, and rental assistance projects) to shorter-term leasing contracts, recapturing, and in many cases rescinding, long-term budget authority. In addition, the beginning of the conversion of some Section 8 Existing units to the new voucher program is proposed.

- To continue to reduce the staffing of HUD, as programs or activities are eliminated, or placed on computerized systems.

The HUD budget proposed for FY 1985 would also:

- Implement the new Rental Housing Rehabilitation Grants and Rental Housing Development Grants, authorized in the 1983 Housing Act, but with budget authority approved in a FY 1984 supplemental appropriations act. This would support an estimated 30,000 rental rehabilitation units and 6,000 newly-constructed or substantially rehabiliated units in FY 1985.

- Fund the public housing modernization program at a level of $1.550 billion in budget authority, but partially utilizing funds transferred from previously-committed development funds.

- Fund public housing operating assistance at a level of $1.1 billion, a reduction from $1.5 available in FY 1984, anticipating a drop in the inflation rate for utility costs, and higher tenant rent payments.

- Request no direct funding for either FY 1984 or FY 1985 for the Congregate Housing Services Program or for the following new activities authorized by the 1983 Housing Act: Emergency Shelter; AFDC Demonstration for Housing improvement; and Neighborhood Development Grants.

Total HUD budget authority is requested at a level of $10.6 billion in FY 1985 -- a cut of 23 percent from the $13.7 billion level of FY 1984, and of 34 percent from the FY 1983 level of $15.9 billion.

Total new budget authority for assisted housing of $5.3 billion is requested for FY 1985 -- a drop of 44 percent from the $9.9 billion approved in FY 1984, and of 73 percent from the $19.8 billion in FY 1981.

A HUD staff of 11,910 permanent full-time employees is projected by the end of FY 1985 -- a cut of 21 percent over the 15,122 employees at the end of FY 1981.

Overall a total of 100,000 additional units of assisted housing would be reserved in FY 1985, comparable to the 100,000 reservations projected for FY 1984. However, only 12,500 of these are net additions to the nation's housing stock, with the balance, 87,500 units (88% of the total) for the new program of vouchers to be utilized in existing housing units. Thirty Thousand of these will be used in conjunction with the Rental Rehabilitation Grant Program. Of the 12,500 newly-constructed units to be reserved 10,000 units would be Section 202 elderly/handicapped housing, and 2,500 units would be Indian Public Housing.

It should be emphasized that vouchers or certificates do not create new housing units, and that they depend on existing vacancies -- a situation not prevalent in many communities.

The HUD budget proposed by the administration is grossly inadequate; it simply continues the effort to curtail the federal committment to housing and community development.

II. COMMUNITY DEVELOPMENT

Mr. Chairman, NAHRO firmly believes that an appropriation for the CDBG program of at least $4 billion could be justified at a funding level which reflects inflation since 1982 and a 3% real growth over FY 1984. This estimate does not reflect increased eligible activities and the continuing addition of new entitlement communities. Our collective experience and our sense of fairness compels us to challenge the priorities reflected in current funding levels for the program.

After nine years, the CDBG program has demonstrated its value in helping communities meet their preservation and development needs. Funding levels have not increased since 1980, while inflation has eroded the program's purchasing power, and the scope of eligible activities, as well as the number of communities, have increased. Funding in fiscal year 1984 remains at $3.45 billion, the same level of funding as in FY 1982, and less than the $3.81 billion level in FY 1981, $3.9 billion in FY 1980, and $3.75 billion in FY 1979. The deplorable fact is that the value of the appropriation in constant dollars has declined yearly since 1978, with current levels significantly lower in real terms than the 1975 funding level.

We strongly object to HUD's proposal to undo the stated intent of Congress in the 1983 HUD authorization bill by acting to deny cities the use of a lump sum drawdown of their CDBG funds for rehabilitation. While a few cities have been found to be entering into agreements that do not result in the maximum leveraging benefits, many cities have responsibly and quite adroitly negotiated with local fiancial institutions to net them the best return on their initial deposits.

Also, NAHRO supports an increase in the authorized level of appropriations for UDAG to $557 Million for FY 1985, based on inflation since FY 1982 and a 3% real growth over FY 1984. Since its inception, UDAG has achieved an impressive record of leveraging investment. HUD officials have recently stated that they have received more fundable UDAG applications than they have funds for. They have also provided you with the statistics supporting the value of the federal investment. I would also call the Committee's attention to the recent GAO Report to Congress on the UDAG program that cites among its positive findings the following: (1) Private investment expectations exceeded the level of projected investments and; (2) Employment expectations had been met.

Further, NAHRO urges this Subcommittee to support continuation of the Section 312 Rehabilitation Loan Program utilizing loan repayments currently estimated at $80 million and any other funds available in the Rehabilitation Loan Fund. Because of provisions in the Housing and Urban Rural Recovery Act of 1983 which prohibits HUD from establishing funding PRIORITIES ~~properties~~ based on type of dwelling unit (e.g., multifamily only) or receipt of assistance for housing or community development programs (e.g. urban-homesteading only), participating communities will have discretion to make loans for multifamily, single family and non residential properties. As a result of this increased discretion, program activity and demand will significantly increase. We do ask, however, that the Subcommittee urge HUD to publish final regulations for the program.

Lastly, we urge continuation of the Section 108 Loan Program. This is the only gap financing tool left to many cities that would enable them to carry out long term development projects. This program has received accelerated use in recent years; our members have found it particularly useful in financing acquisition and rehabilitation of local structures for use in housing or economic development projects. Because the Section 108 loan program requires the participating local governments to pledge their future CDBG monies as part of the loan security agreement, there is no additional cost to the government because of the burden of forfeiting the use of future CDBG funds, local communities carefully weigh the risk involved in projects proposing to use the loan. The Section 108 loan is a key tool that facilitates large-scale development projects. We need additional, not fewer, such tools.

III. ASSISTED HOUSING

SECTION 8 EXISTING PROGRAM

NAHRO strongly supports adequate funding levels for the successful Section 8 existing and section 8 moderate rehabilitation programs. Funding which would provide sufficient budget authority for a 15-year term should be provided at 52,000 and 7,500 units respectively at least at the 1984 per unit levels of $4,548 and $4,800

Mr. Chairman and Members of the Subcommittee, NAHRO is very concerned about the HUD proposed 29% reduction in the administrative fee paid PHAs for administering the Section 8 existing program. We are likewise concerned about the even lower administrative fee proposed for the voucher program. HUD has not satisfactorily documented the basis for these new fees. In response, NAHRO is currently documenting the costs of performing the necessary administrative tasks with each of the two programs.

Also, NAHRO believes that the Administration's proposed massive substitution of its voucher program for Section 8 existing housing should be rejected. We support the continuation of programs which have proven to be successful in providing housing opportunities to low-income persons. We are not opposed to a testing of the voucher concept at the currently funded level of 15,000 units. We see no justification for converting what was to be a demonstration of the merits of the voucher approach into a full fledged substitute for an ongoing program without hard evidence to substantiate the need and value of such a change.

IV. FUNDING FOR PUBLIC HOUSING OPERATIONS AND MODERNIZATION

1. PUBLIC HOUSING OPERATIONS

HUD Public Housing Assistant Secretary Lindquist made the statement April 3, 1984 that "It is too often overlooked that the great bulk of the 2,800 PHAs operate efficiently and effectively. Our overall goal, is to insure that every occupied unit of public housing provides a good home for low-income people in a safe and habitable community environment. Furthermore, we recognize that public housing now in our inventory is a valuable asset that must be preserved and improved so that it, too, can play a major role in satisfying the overall housing needs for the community in which it is located," Lindquist said.

NAHRO agrees and feels strongly that effectively and efficiently managing this national asset is the major priority for those of us inolved in public housing. Funding of public housing operating subsidies at a level of $1.463 billion for FY 1985 is essential to help us do that job.

HUD's estimate of operating subsidy need for FY 85 is deficient in four major areas which explains the difference between their request ($1.123 Billion) and NAHRO's estimate ($1.463 Billion). HUD estimates utility rate increases over FY'84 and FY'85 of only 2.3%. Fuel oil rates to the consumer have already increased 11.7% in the first five months of FY'84. At the same time, HUD overestimates the impact of the 1983 Act changes in rental income. While individual families and housing authorities will be affected differently, NAHRO estimates the net effect will be no real change in rental income received by all housing authorities, not a $38 million increase as projected by HUD. HUD reduces the subsidy need by $70 million for two adjustments not provided for in the current regulations (vacancy policy and rental income) and fails to provide funding for two areas currently permitted (cost beyond control and the appeals process).

NAHRO continues to devote itself to improving public housing and operational efficiency and managerial expertise. NAHRO recognizes that while the overall performance record of public housing authorities is a good one, there is always room for improvement in the performance of any enterprise whether it is a private or a public enterprise. NAHRO has a long and proud tradition of leadership in fostering improved professional performance in the housing and community development fields. We have been in the forefront in development of training and certification programs for public housing professionals and in the distribution information on effective practices in the management, maintenance and administration of public housing authorities.

Consistent with this tradition and recognizing its leadership responsibilities, NAHRO has created a Performance Standards Task Force to develop appropriate standards of performance for public housing authorities and a mechanism for providing technical assistance to PHAs requesting such. We have also developed a set of recommendations which we have submitted to HUD proposing a "proclaimer" system and other suggestions aimed at improving and simplifying the public housing program.

Mr. Chairman, a serious issue has been raised by public housing authorities concerning the negative impact that would result from the implementation of a recommendation made by the HUD Inspector General in his Internal Audit on Income Used by Public Housing Agencies Under the Performance Funding system (84-TS-101-0004) dated January 20, 1984. The Inspector General recommends that HUD "implement requirements for PHAs with 500 or more units to reimburse HUD for excessive subsidies received due to income underestimates for the most recent 3 PHA's fiscal years ending prior to October 1, 1983 ..." We are concerned about the fairness of requiring such reimbursements and we call the Subcommittee's attention to their potentially serious adverse impact on PHAs.

PHAs adamantly oppose any retroactive recapture of operating subsidies received as a result of income underestimates as described in this audit report. We believe that, under the circumstances, such a recapture is unfair, inequitable, and does not accomplish any useful public purpose. On the contrary, its works against the efforts of HUD and public housing agencies to improve successful management and the general fiscal condition of PHAs.

The income underestimates in question were based on then current regulations and operating procedures followed by HUD staff and PHAs. Prudent business persons are guided by generally accepted accounting principles to realistically, but conservatively, estimate income. This was in fact done by PHAs. The results of this exercise were reflected in budgets reviewed and approved by HUD staff. These estimates were an honest effort by PHAs -- within the parameters of the extant regulations -- to estimate income during a volatile period when interest rates and inflation were wildly fluctuating. All the funds in question were used to support legitimate ongoing public housing agency activities. These expenditures of funds were approved by HUD. There is no allegation by the IG that any of these funds were inappropriately expended.

Retroactive application of regulations and procedures will place more housing authorities in the "financially troubled" category, since their reserve levels will fall below that which HUD has already indicated is the measure of whether an agency is financially troubled or not. Also, many PHAs will experience a severe curtailment in necessary activities because "recapture" of monies already spent would be accomplished by reducing future subsidies. NAHRO has asked the Secretary of HUD not to implement the recommendations of the Inspector General to recapture operating subsidies and to rescind any instructions already issued to the HUD field staff to begin the process of recapture.

Mr. Chairman we are grateful to you for your sensitivity and understanding in this matter and we call upon this Subcommittee to urge the HUD Secretary not to implement the recommendation of the Inspector General to recapture operating subsidies, and further that he rescind any instructions issued to the HUD field staff to begin the process of recapture.

NAHRO stands ready to work with HUD and the Congress in developing mechanisms and standards which will lead to more accurate and timely estimations of PHA income and expense and related operating subsidy needs.

Finally, Mr. Chairman, on the subject of operating subsidies, we would like to point out that the Code of Federal Regulations at Section 890.108(d) permits funding of "costs beyond the control of the PHA.... in the event that excess funds are available ..." Since it appears that there will be excess operating subsidy funds available after all PHA's have been funded for FY 84, NAHRO urges this Subcommittee to specifically provide for $50 million of the excess FY 84 funds to be carried over into FY 85 to be used for funding costs beyond control of the PHAs incurred during the PHA's FY 1984.

2. PUBLIC HOUSING MODERNIZATION

Mr. Chairman, we would like to express our appreciation for this Subcommittee's consistent strong support of the Comprehensive Improvement Assistance Program. NAHRO feels very strongly that the CIAP is an effective program both for bringing substandard public housing units back into use, and for increasing the useful life, efficiency, and cost effectiveness of currently occupied units and projects. The task before us is that of preserving the $75 billion national investment in the public housing stock.

Knowing that you share our immediate concerns, we are anxious to reiterate the long-term need for modernization and to continue to work with HUD to put CIAP funds to work.

We commend the Committee for its action in funding and guiding the HUD public housing modernization study. It is our hope that this study will produce the data and information we all need to better estimate, on an ongoing basis, the modernization needs of public housing. We must point out, however, that there is concern that the contractor selected by HUD will not be able to spend a sufficient amount of time on site inspections. This issue is the subject of discussion among the PHA advisory group, HUD, and the contractor and merits continued scrutiny.

The need for CIAP funding is still great. The goal of bringing all public housing units to an acceptable standard is still elusive. We believe an appropriation of $2 billion is necessary to retain the momentum gained during the past year and accomplish the job that needs to be done. CIAP is a needed program, a workable program, and a successful program which needs continued support from the Congress. With that support, units will be rehabilitated, energy improvements will be made, and more people will be housed adequately in public housing.

V. MULTIFAMILY RENTAL HOUSING PRODUCTION AND PUBLIC HOUSING DEVELOPMENT

A. MULTIFAMILY PRODUCTION

NAHRO was pleased that last year the Congress and the Administration finally agreed on the need to help preserve the nation's rental housing stock in low- and moderate-income neighborhoods. We strongly supported that effort. Now we have a new rental construction program and a substantial rehabilitation program. We are grateful for this Subcommittee's support of that program and can only hope that HUD will move swiftly to implement it. We would except close scrutiny by the congress of the regulations proposed by HUD.

B. PUBLIC HOUSING PRODUCTION

NAHRO urges the Congress to continue the federal commitment to providing decent, safe and sanitary housing for low-income Americans. We believe the public housing program is still the the most effective and economical financing mechanism to achieve that goal. We urge the Committee to continue to press HUD to expedite the development process by removing unnecessary federal requirements and reviews, preserving HUD field office processing capabilities, and stimulating the development capacity of local public housing authorities.

Notwithstanding the funding of two new programs which will provide some additional units for low income persons, we believe that funding new public housing production at the level of 10,000 units is the minimum that should be considered for FY 1985. This will get production moving again, targeting it to communities with tight housing markets or declining rental housing inventories. This is appropriate since at the urging of the Congress the public housing pipeline will have been reduced to only 800 units at the end of FY 1985!

In calling for new public housing production, we are asking the Subcommittee to face the reality of the housing crisis for those at the lower end of the income scale. Millions of Americans still have a problem finding any decent, suitable, affordable housing at all. In many local communities, there is no substantial supply of rental housing and there is intense competition for the limited number of standard vacant units, pushing up rent levels. At the same time, many of these communities are losing rental housing units that could be occupied by low-income households, but require major rehabilitation.

Even before the impact of the recent recession, virtually all public housing authorities had long waiting lists of eligible households seeking access to public housing. Today those long waiting lists are even longer. In many communities, households seeking public housing face waits of 10 to 20 years given present turn-over rates.

As you well know, Mr. Chairman, there is also an increasing need for low-rent, special-purpose housing that must be accompanied by support services. This includes housing for low-income frail elderly, handicapped, and female-headed households with children.

Finally, NAHRO opposes the proposal in the Administration's budget to utilize $907 million in budget authority to obtain long-term financing of obligations for public housing development and modernization through the federal financing bank of the Treasury Department. We believe this proposal has several deficiencies. First, we believe that tax exempt obligations for low-income housing have a traditional, legitimate purpose. Further, more favorable interest rates for both short-term notes and permanent public housing obligations can be procured by utilizing the private financial market. Secondly, we object to the utilization of $907 million in annual budget authority for this purpose -- authority that could be used to support badly-needed housing assistance activity. Finally, we believe that placing the decision-making for these obligations in the Department of the Treasury, which is unfamiliar with the objectives and operations of the public housing program, is not a sound procedure; such decision-making should remain with the Department of HUD. Also, we agree with the 1983 testimony of the Comptroller-General: "We wonder whether a FFB financing requirement (that all federally-guaranteed obligations be financed through the federal financing bank, unless a waiver is obtained from the Secretary of Treasury) would provide the executive branch with authority to alter credit programs established by the Congress, thus removing important policy and programmatic decisions from the Congress".

Mr. Chairman, NAHRO members strongly support continuation of the federal commitment to housing and community development. We believe these programs do work if adequately funded. With your support and funding at the levels we have requested, many communities will become better places to live, and their people will be better housed. Thank you.

NAHRO RECOMMENDATIONS: DEPARTMENT OF HUD
FY 1985 BUDGET

COMMUNITY PLANNING AND DEVELOPMENT	UNITS	BUDGET AUTHORITY
Community Development Block Grants (CDBG)	—	$4.062 Billion*
Urban Development Action Grants (UDAG)	—	557 Million*
Section 108 Loan Guarantees	—	225 Million
Section 312 Loans	—	90 Million (prior year's recaptures and repayments)
Urban Homesteading	—	12 Million
TOTAL		$4.946 Billion

ASSISTED HOUSING		
Public Housing - Conventional	10,000	$1,800,000 Billion
Public Housing - Indian	2,500	390,928 Million
Housing Vouchers	15,000	241,050 Million
PHA Fees - Vouchers	—	20,625 Million
Section 202 - (Section 8 Support)	14,000	1,926,400 Billion
Section 8 Existing - Regular	52,000	3,547,440 Billion
Section 8 Existing - Mod Rehab	7,500	510,000 Million
Modernization/Public Housing	—	2,000,000 Billion
TOTAL	101,000	$10,436,443 Billion

OTHER (SELECTED PROGRAMS)			
Public Housing Operating Assistance	—	$ 1.463	Billion
Section 202 Loan Fund	—	630.9	Million
Section 235 Home Ownership	—	150.0	Million
Solar Energy Bank	—	50.0	Million
Policy Development and Research	—	20.9	Million
Welfare Housing Demonstration	—	15.0	Million
Fair Housing and Equal Opportunity	—	6.7	Million
Congregate Housing Services	—	6.0	Million
Housing Counseling Assistance	—	3.5	Million

* Adjusted for annual inflation, Fiscal Years 1982 through FY 1985, plus 3% real growth, FY 1985 over FY 1984.

STATEMENT OF MRS. CUSHING N. DOLBEARE, PRESIDENT, NATIONAL LOW INCOME HOUSING COALITION

Senator GARN. Next is Mrs. Cushing Dolbeare.

Cushing, before you start, let me say I understand this is your last appearance as president of the National Low Income Housing Coalition. I just want to say personally how much I have enjoyed the pleasure of working with you over quite a few years; I won't say how many, but it has been quite a few, and although we haven't always agreed, it has been a very warm personal relationship, at least from my standpoint, and I certainly enjoyed working with you.

Mrs. DOLBEARE. Well, thank you very much, Senator. I share or reciprocate your feelings. I certainly enjoyed the opportunity to converse with you about low-income housing problems and, as I said on many occasions, whenever we can make a good case, I found you totally receptive. Where we haven't agreed, I felt that either there might be something wrong with our position or something wrong with the way we stated it.

Senator GARN. Well, thank you very much.

Mrs. DOLBEARE. I was reminded as I was walking over here of the time you and I appeared together on the MacNeil-Lehrer Report. I think Mr. Lehrer opened the question by saying, "Miss Dolbeare, this is a rather strange alliance. Do you really trust Senator Garn?" I wasn't quite prepared for that question, in all honesty. I found myself saying, "Well, I don't know why I shouldn't. After all, Senator Robert Taft was one of the staunchest supporters of low-income housing, and it's a good conservative Republican tradition. I fully expect Senator Garn will be as much a champion of low-income housing as Senator Taft was then."

I was thinking if my gift for prophesy were always that correct, I would be very fortunate, indeed, because I certainly appreciate very, very much the efforts which you have put in on behalf of low-income people over the years that you have been in the Senate. I hope we will be continuing to work together, because while I am leaving my job at the coalition, I think the election has been rigged so I will continue to be the chairperson and continue to be active on low-income housing issues.

Senator GARN. Good. Please be seated.

Mrs. DOLBEARE. It is always an effort to have my cake and eat it, too.

My testimony is divided into two major sections. The first is a relatively broad overall look at housing needs, and the second are some specific recommendations about the HUD appropriation for 1985. It seems to me, though, that it is necessary to approach the 1985 appropriation in the context of what our overall needs are and how fast we can move to meet them. I served, as you may know, as an alternative to Senator Brooke on President Reagan's Commission on Housing. That Commission found that there were over 10 million very low income renter households. About one-quarter of them lived in subsidized housing. Almost all the rest had a housing problem. They either paid more than they could afford for shelter or they were living in substandard shelter, or both. That really means that after almost a half a century of effort in dealing with low-income housing problems, for every very low-income household that is receiving or living in subsidized housing, there are 30 others who need it, who probably want it, and who can't get it because it isn't there.

It seems to me that that is, as I have described it, the lowest responsible estimate of our low-income housing need. There are other estimates that are much higher. I never thought it made much sense to worry about which estimate was right until we reached the lowest one and looked around and saw whether or not we had a problem.

It seems to me that programs and funds to meet the housing needs of these families ought to be our highest national housing priority. I realize that is not about to happen, but we would like to see it happen as soon as possible. The National Low Income Housing Coalition, in reviewing housing policy and making an effort to define a new set of housing initiatives, has come to the conclusion that we really ought to get ourselves a new numerical target and that that target ought to be to add to the supply of housing which is earmarked for low-income people at least 750,000 units a year.

That would give us 7½ million units at the end of a 10-year period. I chose the words carefully, add to the supply of housing earmarked for low-income people, because that includes existing units in good condition, moderately rehabilitated units, substantially rehabilitated units, or newly constructed units, depending on the need of the local situation.

The coalition believes that we cannot solve the housing affordability problem without something such as a housing voucher program, but a voucher program which would be available for all qualified and eligible households, not just the lucky few who happen to get the first 80,000 units or whatever it is that are earmarked.

However, we don't believe that the cost of such a program can be kept at reasonable levels unless there is a supply of housing which is in the hands of limited equity cooperatives, nonprofit organizations, community-based organizations, others who are in housing because they wish to provide housing at low cost and not because they are trying and as is appropriate for much of our economy, to make themselves a couple of dollars doing some urgently needed work.

So that we propose this goal of housing as an adjunct to a housing allowance program which would be an entitlement program.

Now, I know that funds are limited. However, we have calculated, and it is in my testimony. There is a little table that is related to house-related expenditures, primarily homeowner deductions over the last 3 years, compared to what's happened to outlays and budget authority for assisted housing. If you use the estimates of the Congressional Budget Office, the cost of the housing-related tax expenditures will have risen from $26 billion in 1980 to an estimated $55 billion in 1985. HUD's calculations of a couple of years ago on the last annual housing report indicated that 75 percent of those tax expenditures benefit people in the top 15 percent of the income distribution.

Now, if that relationship holds, and it has tended to slide upward, so these are conservative estimates, if we were to cut in half the amount of the housing-related tax expenditures that benefit just people in the top 15 percent of the income distribution, leaving the middle-income tax subsidies, which I think are essential in one form or another to keep people in the housing they already have, leaving that untouched, if we were to cut the others in half, we would have approximately $20 billion which could then be channeled into the kind of housing allowance program we are talking about and into other programs which would provide that supply of 750,000 units a year.

I mention that because I think it is important as an issue of fairness, and I'm not using that in a partisan sense, because the unfairness of our housing system is thoroughly bipartisan and has arisen more or less by happenstance in the entire post-war period.

But I mention that as an illustration of the nature of the kind of policy issues that we are going to have to grapple with if we are going to make the goal of decent housing for every American family a reality before the end of the century.

I would like to turn now with just a couple of comments on the relationship of what has happened to housing and what has happened to military spending, which I think are rather striking. I did a little table which shows for each dollar of military spending how much we put in budget authority into low-income housing. In 1977, it was 26 cents. This is, of course, the spread out budget authority in each case. In 1980, it was 19 cents; in 1981, it was 14 cents; in 1984 it's 3 cents, and in 1985, the administration is proposing a cent and a half. Now, that is a very dramatic change, and it is the kind of change which I think our housing program simply cannot survive.

Let me turn now in the remaining time to the laundry list and I know you have been here most of the day and you have heard this from other witnesses, so I will treat our recommendations as a laundry list and ask that a corrected copy, if I may, of our testimony be put in the record. I notice that we got a little garbled there, and I apologize for that.

Senator GARN. Certainly. We will include it all in the record.

Mrs. DOLBEARE. Thank you. Essentially, our first recommendation, of course, is more, as much subsidized housing as possible, or as much subsidized housing as can be squeezed out within the limits of the authorization legislation which permits for 1985, I believe, in most programs, such sums as may be appropriated and the budget resolution; for the section 8 existing and moderate rehabilitation programs, the 202 program and additional public housing, including Indian housing, and we would, of course, want to see the programs enacted in 1983, given a chance to work with funding at the levels authorized.

Let me comment a minute about the administration's voucher proposal. I mentioned we were in favor of an entitlement housing allowance proposal which probably would look very much like the voucher program with a few changes in details. However, we are opposed to the administration's proposal at this time for a number of reasons. In the first place, I really don't think it should be dignified with being called a voucher program. We calculated that it would take 86 years at the level they are proposing to provide vouchers for the 7½ million eligible households that the administration, President Reagan's own Housing Commission, identified as in need. If they had taken advantage ofthe saving which is really an accounting saving, because the basic savings is shortening the contract term for 15 years to 5 years and plowed it back to say initial vouchers and trying to say, we found a better way of solving the problem instead of some 80,000 vouchers, they could have funded almost 300,000 vouchers and reduced that time period 26 years from 86 years.

The other thing that we are concerned about is that the administration's proposal, as we understand it, does not and get some of its savings compared to section 8 existing by not providing adequate support for Outreach, for tenant support, for counseling, including fair housing counseling, all features of a voucher program which were recommended by the President's Commission.

The final concern that I want to mention today is one of the existing stock of subsidized housing, the 236's, primarily, some of the rent supplement projects. It seems to me that it is imperative, since we are not adding to the stock of assisted housing in any meaningful way, at least to hold on to what we have. We appreciate your support of that ill-fated amendment on the tax bill which was an effort to keep syndications alive and functioning. That apparently is not going to happen, and, therefore, I think that there may well be a need for an extra appropriation for troubled projects or some other way so that if the money is not provided to keep projects from going under through the resyndication process, it still is less expensive in the long run to do it through a direct appropriation, and I would urge that you consider that problem when you are putting the bill together.

Thank you very much.

Senator GARN. Cushing, thank you. Once again, let me just say that I know of no one that has been a more effective spokesman or spokeswoman for the low-income housing of this country, so I look forward to working with you in a different capacity.

Mrs. DOLBEARE. Thank you very much.

Senator GARN. Thank you.

[The statement follows:]

STATEMENT OF CUSHING N. DOLBEARE, PRESIDENT, NATIONAL LOW INCOME HOUSING COALITION

The National Low Income Housing Coalition appreciates this opportunity to testify on the 1985 appropriation for the Department of Housing and Urban Development. We will emphasize low income housing, and attempt to set the Department's budget request in the context of the critical housing needs of low income people.

Two years ago, President Reagan's Commission on Housing submitted its final report to him. That report stated that there were over ten million very low income renter households in this nation. One quarter lived in subsidized housing. Almost all of the rest were in substandard housing or paying more than 25% of their income for shelter, or both. In other words, after almost half a century of providing housing assistance for low income people, we are still at least 7.5 million units short.

The National Low Income Housing Coalition believes that sound, effective programs to meet the needs of these 7.5 million households should have the highest priority in allocating resources for housing. To deal with their needs, we believe several major changes in federal policy and programs -- unfortunately reaching well beyond the jurisdiction of this committee -- must be adopted. Primary among these are a housing allowance (or "voucher") program, under which the groundrules for eligibility would be set and then vouchers made available for all who qualified. Such a program must be coupled with effective approaches to provision of affordable housing, or the cost of the program could become uncontrollable. We therefore propose that at least 750,000 units be added to the permanent stock of affordable units each year.

The rising cost of assisted housing programs is due in large measure to an inability to control housing costs. Over the decade of the 1970's, a decade which saw the largest increase in assisted housing units ever, we lost a net of over one million low rent units (rents below $125 monthly) from the inventory each year, primarily (but not exclusively) to rising rents and utility costs. Using the present 30%-of-income-for-shelter standard of subsidized housing programs, a household with an income of $5,000 can "afford" $125 monthly for shelter. Yet, as the following tabulation shows, the number of low rent units has decreased far more rapidly than the number of low income households:

	1970	1980
Households under $5000	8.4	6.3
Units under $125	14.9	2.7
Surplus/deficit	+6.5	-3.6

In other words, even if problems of quality, availability, and suitability, location and accessability didn't exist, in 1980 there were more than two households with incomes below $5,000 for every affordable unit in the inventory.

Since 1980, there is every reason to believe that the situation has become far worse, although reliable statistics on how much worse are not yet available. Since 1980, the amount we have committed for additional subsidized housing for low income people has dropped by 78 percent, while housing expenditures through the tax code (primarily homeowner deductions) have continued to rise unchecked and, by some estimates, have more than doubled.

Low Income Housing Budget Authority and Outlays Compared to Housing-Related Tax Expenditures, in billions of dollars, 1980-85.

	BA	Outlays	Tax expenditures	
			CBO	OMB
1980	26.7	4.5		26.5
1981	30.2	5.7		33.3
1982	17.7	6.7		36.6
1983	8.7	7.8	46.1	35.4
1984	9.9	8.6	50.5	38.5
1985	6.2	9.3	55.2	41.7

At least three quarters of these tax expenditures go to people in the top 15% of the income distribution. Cutting their tax subsidies in half would release enough to pay for entitlement housing allowances and substantial preservation, rehabilitation and construction. The 1985 figure would be more than $20 billion.

The pattern of inequity embedded within federal housing expenditures must be addressed. This is not a partisan issue: the imbalance between tax and direct expenditures for housing is not one that was decided upon as a matter of national policy. Instead, it just happened: the result of the spread of home ownership, the broadening of the tax base, and rising incomes.

Low income people have borne the brunt of the reordering of national priorities. For each dollar cut from low income outlays, $4.15 has been added to military spending; $2.26 to interest on public debt; and taxes have been cut by $5.40 (measured in constant 1984 dollars, comparing 1981 levels with the Administration's 1985 budget).

Using the information in the chapter on "Budget Program and Trends" in the Budget of the United States Government, FY 1985 as our major source, we have developed, for illustrative purposes, how the federal budget would be changed if we had not had the cuts in taxes and low income programs and the increases in military spending since 1981.

Changes Needed in Federal Budget to Return to Levels Equivalent to 1981 (in billions of dollars)

	1984	1985 Administration Budget
Military spending	-59.3	-81.3
Tax revenue	+90.3	+113.8
Interest on public debt	-42.9	- 50.6
Low income program outlays	+7.7	+10.6

A recent Congressional Budget Office study is reported to have found that the combined impact of tax and benefit changes since 1981 has resulted in an average loss of $390 per year for households with incomes below $10,000 and an average gain of $8,270 per year for households with incomes above $80,000. If we had done nothing else, we could have left low income program outlays untouched if we had been willing to forego only 10% of the tax cuts made. Put in perspective, under the Administration's proposed 1985 budget, for each dollar spent on low income programs, we would spend $3.85 on military; $3.68 on Social Security and Medicare; and $2.33 to pay interest on the debt. About 15 cents of each low income dollar would go for housing assistance, 31 cents for Medicaid, 16 cents for food stamps, 13 cents for SSI, 11 cents for AFDC, and 14 cents for a range of smaller programs (low income energy assistance, refugees, etc).

The striking contrast between the cutbacks in housing and the increase in military spending since 1977 can best be grasped by comparing what, in budget authority, has been allocated for low income housing compared with military spending.

Amount Spent on Low Income Housing for Each $1.00 of Military Spending

1977	26 cents
1980	19 cents
1981	14 cents
1984	3 cents
1985	1.5 cents

Small wonder that we are not meeting our low income housing needs!

Moreover, we have not yet seen the impact of the cuts of the last several years. The Administration has been able to have its cake and eat it too: the last three years have seen the highest level of completions of assisted housing units that we have ever had since subsidized housing programs began almost 50 years ago. But, as the chart on the next page shows, this is clearly the doing of the Ford and Carter Administrations.

Specific Recommendations

Additional Low Income Housing. It is important to consider the specifics of the 1985 HUD appropriation in the light of this background. We strongly urge that the Subcommittee report an appropriations bill which uses need, rather than last year's levels or the Administration's request, as your primary criterion and that you appropriate the funds authorized in 1983 for the rental rehabilitation and development program.

In addition, we strongly urge the appropriation of funds for expanding the Section 8 Existing and moderate rehabilitation programs and for the 202 program and additional public housing including Indian housing. These programs have proven their effectiveness in providing housing for low income people. Moreover, even though reluctantly, the Administration has proven willing to let them continue while pursuing its own housing approaches.

Vouchers. Although the National Low Income Housing Coalition is, as mentioned above, in favor of an entitlement housing allowance program, we oppose the Administration's request to expand the minuscule voucher program approved last year. At the level requested by the Administration, it would take 86 years to provide vouchers to the 7.5 million very low income renter households not presently receiving housing assistance. Had the Administration chosen instead to use the saving in budget authority represented by shortening the contract term from fifteen to five years to expand the number of people served, it could have provided vouchers for some 300,000 additional households and reduced to 25 years the time it would take to meet our present needs.

An approach which would plough the "savings" back into program expansion would have been far more palatable. However, the savings are for the most part either illusory or result from neglecting what we regard as key elements of a successful voucher program: outreach, tenant support, and counseling, including fair housing counseling. The cost difference between Section 8 existing and vouchers lies almost wholly in the shorter contract term. We also see no merit, as long as housing programs continue to function under long-term contracts, of cutting the contract term for vouchers. The other major cost difference lies in adjusting the payment standard to reflect rising rents only twice over five years instead of annually. For very low income families, living at the margin of affordability, this is a painful way to try to save federal funds.

In short, we urge that the appropriation act explicitly limit the "voucher" program to the level authorized last year, prohibiting the conversion of present Section 8 Existing contracts to vouchers and continuing funding for the present program.

The existing subsidized housing stock. In this time of very limited and lagging expansion of assisted housing programs, it is critical that high priority be given to retaining the present stock of assisted housing in good condition for low income occupancy. Funds spent on upgrading and improvement and to work out repayments for projects in financial difficulty are a fraction of the cost of replacing the housing. [Even the success of a voucher program in reducing costs depends on a large supply of viable units at relatively low rents.] The Coalition is deeply concerned that HUD appears to condone or encourage the conversion of presently subsidized housing to higher income occupancy. We urge that the Committee give its strong support to the principle of retaining this housing for lower income people and that you act to meet an immediate problem caused by the tax legislation adopted last month.

Because of the paucity of funds available for direct subsidies, increasing use has been made during the past several years of the funds available for resyndicating low income housing projects and using part of the syndication proceeds for project improvements or to reduce indebtedness. This is, in our view, a costly method of accomplishing a worthy objective: retaining the existing subsidized housing stock for low income occupancy. It would be far preferable, we believe, to appropriate directly the funds needed for project improvement and to encourage HUD, using troubled project or other subsidies, to enter into workout agreements where the mortgages are delinquent. We ask this Subcommittee to examine this question for two reasons: first, because we believe it is a better approach and, second, because provisions in the tax legislation pending in both House and Senate would make many of these resyndications unworkable and could result in the loss of additional thousands of subsidized units.

We support the immediate appropriation of the $60 million authorized last year for emergency shelters for homeless people. The growing problem of homelessness is the tip of the iceberg of the low income housing problem. It is bound to get worse, because the low income housing crisis is growing. We believe it is urgent to institutionalize within HUD the capacity to provide assistance for emergency shelters, though, if HUD is unwilling to undertake such a program, we have no objection to providing the funds to an agency which will do so. However, if the funds are appropriated to the Federal Emergency Management Agency, we believe it is vital that their purpose be confined to the provision of shelter and that the allocation formula be improved so that rural areas, which also have a problem of homelessness, can receive a share of the funds.

We also urge that the 1985 appropriation include funds for the congregate services, public housing day care, neighborhood development, and housing/welfare demonstration programs and that adequate assistance for housing counseling be provided. It is not, in our view, a feasible or adequate substitute for direct appropriations to point to the option which localities have of using community development block grant funds for these programs. Measured in constant 1984 dollars, the total level of CDBG funds has been cut almost one quarter since 1980.

Finally, the National Low Income Housing Coalition wishes to express its appreciation to the members of this Subcommittee for your efforts to keep low income housing programs alive during these difficult times. While we believe we have made a conclusive case for the need to reverse direction and expand federal support for decent, affordable housing, we also recognize that things would be even worse without your resolution and commitment.

SUBSIDIZED HOUSING UNIT RESERVATIONS, STARTS, AND COMPLETIONS, 1975-1985
(Section 8, public housing, 202, 236 and rent supplement programs)

ADDITIONAL NEW OR REHABILITATED UNITS

RESERVATIONS:

Year	Units	Units
1975	101,338	************************
1976	227,873	***
1977	231,551	**
1978	202,215	***
1979	249,171	**
1980	214,685	**
1981	135,249	*********************************
1982	51,216	************
1983	35,931	*********
1984	29,000	*******
1985	12,500	***

STARTS:

1975	48,403	************
1976	78,880	*******************
1977	128,501	*******************************
1978	179,262	***
1979	184,318	**
1980	183,011	**
1981	144,348	***********************************
1982	119,027	*****************************
1983	81,220	********************
1984	52,000	*************
1985	33,000	********

COMPLETIONS:

1975	119,215	*****************************
1976	133,164	********************************
1977	50,235	************
1978	100,532	************************
1979	160,638	***************************************
1980	177,013	***
1981	218,370	***
1982	144,810	***********************************
1983	137,400	*********************************
1984	112,517	***************************
1985	89,342	**********************

SECTION 8 EXISTING AND VOUCHERS

RESERVATIONS:

1975	55,322	*************
1976	206,046	**
1977	140,480	**********************************
1978	98,300	************************
1979	90,375	**********************
1980	36,336	*********
1981	83,041	********************
1982	23,418	******
1983	36,163	*********
1984	71,000	*****************
1985	91,000	**********************

Source: Compiled by Low Income Housing Information Service from HUD budget documents.

Environmental Protection Agency

STATEMENT OF HON. ALAN CRANSTON, U.S. SENATOR FROM CALIFORNIA

Senator Cranston. Mr. Chairman, thank you very much for letting me testify, conveniently upon my arrival, and thank you for the opportunity, more generally, to appear before the Senate Appropriations Committee Subcommittee on HUD and Independent Agencies to request funding in fiscal 1985 for the construction of a sewage treatment facility in San Diego, Calif., to handle sewage from Tijuana, Mexico.

As you may be aware, on April 24, Senator Wilson and I introduced legislation (S. 2587) to authorize the Administrator of the EPA to make grants to the city of San Diego for the purpose of constructing a primary treatment plant in that city to treat sewage from Tijuana, Mexico. The legislation contains an authorization of $55 million in Federal funds—the minimum amount necessary to eliminate the serious public health problem posed by raw sewage flowing across the border into San Diego. Additionally, the bill directs the State Department to enter into negotiations with Mexico to seek contributions toward the plant's construction and maintenance.

Today I am requesting that the Senate Appropriations Committee provide $25 million in fiscal year 1985 for the initial work on this San Diego/Tijuana sewage treatment plant. The moneys would be used for site acquisition and preparation, engineering, and initial construction. The facility could be operating within 2 years if Congress appropriates the needed funds in fiscal years 1985 and 1986.

Mr. Chairman, I recognize that this is an unusual request in light of the fact that the authorization bill has not yet been approved by the Senate. However, because of the seriousness of the situation, I urge the Senate Appropriations Committee to give the request special consideration.

By way of brief background, Tijuana now has a sewage facility which handles 5 million gallons of sewage a day, only a small portion of the 40 million gallons of sewage currently generated in that city. Because of this inadequate capacity of the Tijuana system, sewage overflows into city streets and these overflows are common. The Tijuana facility, moreover, is poorly constructed and breaks down on a regular basis. As a result, raw sewage runs down the watershed and is transported into the United States via the Tijuana River, polluting and contaminating lands, beaches, and ocean waters on the U.S. side of the border. The public health problem in San Diego is immediate and critical. On numerous occasions the San Diego area beaches have had to be closed for the public's protection. Part of the coastline was quarantined for 307 days in 1980, 219 days in 1982, and 309 days in 1983.

Unfortunately, this pollution and public health problem has persisted in spite of the efforts of the U.S. Department of State, through the International Boundary Water Commission, to bring pressure on the Government of Mexico to improve Tijuana's sewage system. Without direct congressional intervention and action, I'm convinced that the situation will only get worse as additional Tijuana households hook up to the city's system and the city's population grows. The current 40 million gallons per day of sewage is expected to reach the level of 100 million gallons per day by the year 2000. The increased danger to health, environment, and economy of the San Diego area is clear.

I am aware that Mexico is taking steps to complete, by the end of this year, a 60 million gallon per day pumping plant to replace the two old plants. Mexico has installed a 42-inch pressure line to replace the two old parallel lines and upgraded its open conveyance canal which is carrying effluent to the ocean. But more work must be done to stop the flow of raw sewage from Mexico into San Diego. This is an international situation. The U.S. Government has a responsibility to protect its citizens from this foreign pollution.

Mr. Chairman, there are other pollution problems along the United States-Mexican border involving the flow of untreated sewage into the United States—most especially via the New River in Imperial County, Calif. I encourage the committee to consider these problems as well. I am focusing here today on the Tijuana River situation because of the magnitude of the problem and the fact that a solution is at hand. San Diego has engaged an engineering consultant and is in a position to proceed with a primary treatment project in fiscal year 1985 if Federal funds are available.

So, Mr. Chairman, I urge the Senate Appropriations Committee to appropriate $25 million in fiscal year 1985 as part of the Environmental Protection Agency's budget for the construction of the San Diego/Tijuana sewage treatment facility. I thank you very much.

Senator GARN. Thank you, Senator Cranston.

We are pleased to have you with us.

Senator Wilson?

STATEMENT OF HON. PETE WILSON, U.S. SENATOR FROM CALIFORNIA

Senator WILSON. Thank you, Mr. Chairman.

Mr. Chairman, I will summarize. My colleague has laid before you, in, I think, a very thorough fashion the nature of the problem that we are facing. So let me just emphasize some of the points that he made, and also, to begin a point that we are dealing with the Appropriations Committee in advance of having authorization. Let me respond to that problem in this fashion: Not identical, but companion, legislation has been introduced on the House side. It has received approval of the authorizing committee there. In fact, their legislation really contemplates a more ambitious project than that for which Senator Cranston and I are seeking funding.

My point is, I think that the authorization problem is not inseparable and, in fact, has been dealt with on the House side.

By contrast, their legislation has not constrained a figure. You heard Senator Cranston say that what we are asking for is $25 million. That would allow completion of the design and the actual beginning of construction. I emphasize to you that this is to deal with a problem that is not merely an irritant. He mentioned the "new" river. The new river, to put it bluntly, is an open sewer flowing through the city of Calexico. We are here today to deal with the problem generated by the increasing population of Tijuana and I think in terms of equity, we are dealing with a problem that is very clearly not of San Diego's making, the new river is not of Calexico's making.

We are, to give you just brief history, dealing with a problem that grew out of the fact that some 20 years ago under a treaty obligation of the United States, San Diego began to accept Tijuana's sewage on what was presumably to be an emergency basis. Well, the facts of the matter are that Tijuana has grown to the point where that emergency is unending and, indeed, as a result of the obligation to accommodate that need, the citizens of San Diego have been paying, as local taxpayers, $1.8 billion a year for the treatment of Tijuana's sewage.

Now, that is simply not fair. But it goes beyond the question of fairness. We are dealing with a real and serious health hazard of the gravest possible dimensions. We are fortunate that nothing worse has occurred than the substantial inconvenience and injury to the economy of San Diego. When you have got over 500 days of quarantine on the beaches of the Sputh Bay of San Diego County, you have got a situation that really cannot be ignored.

Now, the Mexican Government very candidly, I think, has been derelict in not addressing a problem that is of their making. And as Senator Cranston has told you, the bill which he and I are introducing or have introduced seeks to obtain a redress of that by directing the State Department to negotiate for reimbursement or for payment by the Mexican Government for their fair share of the costs involved dealing with this problem. But, very candidly, for reasons that I think are known to the chairman, we simply can't afford to wait until the State Department has achieved success in those negotiations.

In the meantime, the health hazard is immediate, and it is grave, and it is growing. The Federal Government, to put it simply, has an obligation, to use the words of my colleage, to protect American citizens from this health hazard. We are dealing with a defensive situation here. It is perhaps unique in that while we are seeking Clean Water Act funds, it is really an international problem, and a problem that arises not out of any local dereliction, but frankly, out of a situation created by treaty and by the inattention of our Mexican neighbor.

So, Mr. Chairman, what we are asking is that we be allowed to cure the authorization problem and that we be allowed to begin construction because every delay that is introduced into this situation aggravates the chance that San Diego is going to suffer not inconvenience, but a very serious health problem.

Senator Garn. Let me thank both of you, and I certainly would tell you I am very well briefed on this issue. The present mayor of San Diego came to see me some weeks ago, and we talked about it, and I don't disagree with a word either one of you have said. But I think you also have to recognize the problem that I deal with is there are a lot of our colleagues who come in, not with international problems, but with simple immediate health problems, who would like me to try and appropriate without an authorization. So I have a difficult time going ahead and doing that.

Do you have any idea when S. 2587 is going to be acted upon, either one of you, or are you putting the pressure on for the authorizing committee to take care of this? Because that is really my problem. If this were an isolated example of a request to appropriate without an authorization, I could probably sit here and justify and say, "Well, this is an emergency, we have got to move ahead and not worry about the normal Senate procedure."

But every year that I have been chairman—and I am not going to take your time—you can't imagine how many emergency requests I have had because the authorizing process was not moving ahead.

Senator CRANSTON. Mr. Chairman, the House version of the Clean Water Act already has a provision that would cover this need for San Diego. We have been in touch with Senator Chafee. The Clean Water Act may be on the Senate floor next week; at any rate, the Clean Water Act will be before the full Senate some time very soon, and we plan to offer an amendment at that time to that act. That would provide the authorization. So we should be able to accomplish this, and I think we will be successful within a matter of days.

Senator GARN. I hope so, because I think you can understand my procedural problem——

Senator CRANSTON. Yes.

Senator GARN [continuing]. In attempting to move ahead.

On the international side, I don't know whether this has been brought to your attention, but there are 32 Texas communities on the Rio Grande that dump raw sewage into that river. So I would agree with you, Pete, that the Mexican Government may not have been as responsible as they should, but our Government in Texas, apparently, hasn't been as responsible as they should be with the Mexicans, either, and this is brought up in the negotiations. But that is not for me in this position to worry about the international treaties. I do feel strongly that I need an authorization so that I am not opening up a bunch of, "Well, you turned me down the last year and the year before. Why were you nicer to California than you were to some other places?" and I have had to adhere to that even in my own State.

Believe me, I have had requests for appropriations without authorization. "Well, you are chairman now, and you are from our State."

So I certainly would hope you would push on the authorization process, and that certainly removes a procedural problem.

Senator CRANSTON. We will.

Senator WILSON. Thank you very much, Mr. Chairman.

Senator CRANSTON. Thank you. We appreciate your awareness of the need, and we understand the problems you face.

Senator GARN. That is one of the hazards of being an ex-mayor. The mayors are always in contact.

Senator WILSON. I am aware of the fact that this Chair is not only compassionate and wise, but has distinguished experience in another role.

Senator GARN. I get all my old mayor friends, including new mayor friends that I didn't know, that come in and say, "Well, I know you served with Mayor Wilson for a long number of years, and so you will undoubtedly be sympathetic."

Senator CRANSTON. It is also great for our cause to have a former mayor of San Diego present.

Senator GARN. Thank you, gentlemen.

Senator WILSON. Thank you, Mr. Chairman.

Senator CRANSTON. Thank you.

Senator GARN. Congressman Lowery, Congressman Ron Packard and Congressman Hunter, if you are all here?

Mr. Lowery. Two of us are here, Mr. Chairman.

STATEMENTS OF:

HON. RON PACKARD, U.S. REPRESENTATIVE IN CONGRESS FROM CALIFORNIA

HON. BILL LOWERY, U.S. REPRESENTATIVE IN CONGRESS FROM CALIFORNIA

Senator GARN. Please proceed.

I am not talking any more than I have to today with this miserable cold and voice, so go right ahead.

Mr. LOWERY. Mr. Chairman, we thank you for the opportunity to testify and for giving us the opportunity to address what has indeed been a major public health emergency in the San Diego area. The threat of widespread health hazards caused by the dangerously inadequate sewage treatment system in Tijuana, Mexico, is quite severe.

For the past 4 years, the Tijuana system has been in a permanent state of overload, requiring San Diego to treat over 13 million gallons, or 80 percent, of Tijuana's sewage per day. Clearly, we have before us an international issue for which the Federal Government must provide leadership.

As you are aware, Senators Wilson and Cranston, who just left, together with the congressional delegation from San Diego, are seeking an authorization for an appropriation of funds to begin working on a permanent solution to the Tijuana sewage problem. I am happy to report that the House Public Works Committee, which Congressman Packard is a member of, included appropriate language in its clean water authorization bill to provide treatment for 60 million gallons of sewage per day for the city of Tijuana, Mexico.

Briefly, Mr. Chairman, I would like to stress that concurrent with any legislative activity, we would expect the executive branch to pursue, through diplomatic channels, an annex to the agreement signed by Presidents Reagan and de la Madrid on August 14, 1983. This annex will encourage the Mexican Government to complete, extend, and upgrade the Tijuana sewage system.

In addition, Mr. Chairman, we believe that if Federal funds are forthcoming, Mexico should reimburse the United States for construction, operation, and maintenance facilities for the treatment of Mexican sewage, and the House authorizing language specifically contains such an offset provision. The dual question of whether Mexico would be willing to pay and when it can pay should be the subject of ongoing negotiations between our respective governments.

Mr. Chairman, I only wish to stress, before I conclude, just how aggravated this problem has become. Like your previous witness, Senator Wilson, I was also a member of the city council before coming to Washington.

Senator GARN. I don't understand why either one of you want to leave San Diego.

Mr. LOWERY. Sometimes we ask ourselves that question, but today is not too bad a day.

But in 1965, we signed a 20-year service pact with Mexico where we would agree, on an emergency basis, to undertake Mexican sewage. Through 1975, San Diego treated Mexican sewage an average of 26 days a year. However, that situation has become vastly changed in recent times.

In 1976, Tijuana sewage was treated 90 days. It rose to 253 days in 1978. In the past few years, San Diego has treated Mexican sewage each and every day of the year. The problem is even more aggravated in that we have been experiencing quarantines on San Diego beaches: 307 days of quarantine in 1980; 219 days in 1982; 309 days in 1983. It is just an incredible, difficult problem that the city is attempting to deal with and the State has agreed to participate in, and we, of course, need Federal assistance, as well.

With that, Mr. Chairman, I will submit my formal remarks and my colleague has possibly some and possibly you may have some questions.

[The statement follows:]

STATEMENT OF REPRESENTATIVE BILL LOWERY

Mr. Chairman and distinguished members of the subcommittee, thank you for affording me an opportunity to address what has indeed become a major public health emergency in the San Diego area. The threat of widespread health hazards caused by the dangerously inadequate sewage treatment system in Tijuana, Mexico, is severe.

For the past 4 years, the Tijuana system has been in a permanent state of overload, requiring San Diego to treat over 13 million gallons, or 80 percent, of Tijuana's sewage per day. Clearly, we have before us an international issue for which the Federal Government must provide leadership.

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Chairman, we believe that if Federal funds are forthcoming, Mexico should reimburse the United States for the construction, operation, and maintenance of facilities for the treatment of Mexican sewage, and the House authorizing language specifically contains such an offset provision. The dual question of whether Mexico would be willing to pay and when it can pay should be the subject of ongoing negotiations between our respective federal governments.

Thank you.

Senator GARN. Congressman Packard.

Mr. PACKARD. Thank you, Mr. Chairman.

I, too, am very pleased to be able to join my colleagues in testifying on such a major health hazard and water pollution problem in San Diego. We are extremely concerned by the problems presented by Tijuana's inadequate water sewage system.

Very briefly, Tijuana is a city of 1 million inhabitants which is expected to more than double by the year 2000, located directly across the California-Mexico border from San Diego.

For most of the past 50 years, this problem has been intermittent. Now, however, due to a complete failure of the Tijuana system, San Diego has been forced to deal with Mexican sewage every day for the past 3 years.

To control permanently this untreated sewage flow, consultants have recommended the construction of a joint international waste water treatment facility on the U.S. side of the border. Right now, we are trying to find a solution to deal with the immediate public health hazard.

The authorization of this project is in the Clean Water Act reauthorization which will be marked up in full Public Works Committee, Public Works and Transportation Committee later this week. That reauthorization calls for a publicly owned treatment works to provide primary or more advanced treatment of not less than 60 million gallons of municipal sludge and industrial waste per day.

The first stage of this project would be to treat Mexican sewage only. Long-range plans would also treat San Diego's sewage.

At the present time, the United States is in a better position than the Mexican Government to assist local agencies with building adequate sludge treatment facilities. Reimbursement agreements from the Mexican Government will be pursued through diplomatic channels as soon as possible.

Congress must recognize that this is an international problem. Let me read that again. Congress must recognize that this is an international problem. Even though the situation is felt only by residents of one region in one State, repercussions are felt nationwide. Costs associated with increased health risks, lost tourism revenue, and ill well bred among citizens of neighboring countries are all national problems.

What began as a sporadic emergency situation has expanded to crisis proportions. San Diego is but a little Dutch boy with his finger in the dike, and he doesn't have the resources to plug all the leaks.

Other testimony submitted by my colleages in San Diego corroborate the points that I have made. The need is real. Both the Environmental Protection Agency and the State of California join in our request for favorable consideration by this subcommittee. We must deal with this problem firmly and directly.

Mr. Chairman, I am very grateful for the opportunity of making my presentation and I ask that you examine closely the real need for favorable action on a major international problem. Thank you very much.

Senator GARN. Thank you, gentlemen. I don't know whether both of you were here as I was talking to my two Senate colleagues, but I do hope that you will push for an authorization. It is very difficult, with all the requests that I get, to appropriate without an authorization. We all know that it is done at times in both the House and the Senate. Maybe I try to be cleaner than some of my colleagues and make the process work the way it is supposed to, but I do get a large number of requests when the authorization process doesn't work and "pinch, plug in $3 million here" and small quiet ones. You know what I mean. So it opens up a lot of floodgates for me if I try and move ahead without an authorization.

I would encourage you to work on the House side as I encouraged my Senate colleagues. It would be even much better and easier if we had a request from OMB. If you can do anything to get OMB to request the $25 million and get an authorization, it makes my situation a great deal easier.

Mr. LOWERY. Mr. Chairman, we are pursuing both of those suggestions. Ron can probably comment further. I am rather confident we are going to have an authorization on the House side.

Mr. PACKARD. I feel confident it will clear full committee markup this week. I can't project when it will be on the floor of the House, but I am convinced it will be before the end of our June recess.

Senator GARN. Thank you both for testifying. We are in the middle of a vote. I am going to leave, but I will return to hear your colleague, Congressman Hunter. Thank you both very much.

Mr. LOWERY. Thank you, Senator.

Mr. PACKARD. Thank you, Senator.

[A brief recess was taken.]

Senator GARN. The subcommittee will come to order.

Congressman Hunter, we are pleased to have you before the committee. Please proceed.

STATEMENT OF HON. DUNCAN L. HUNTER, U.S. REPRESENTATIVE IN CONGRESS FROM CALIFORNIA

Mr. HUNTER. Thank you, Mr. Chairman.

I have a prepared statement I would like to submit for the record.

Senator GARN. We will include it in its entirety in the record.

Mr. HUNTER. I appreciate that. I would like to speak simply to summarize and lay out, and, hopefully, in a brief statement, the problem that we had in San Diego. The first problem is that we are in the same basin, if you will, the Tijuana River basin, with our neighbor to the south, Tijuana, and our neighbors discovered long ago that we are on the down slope from Tijuana. We have at the present time a very incomplete sludge system in the city of Tijuana. They are getting more water all the time from the Colorado River which, of course, dries up the sewage output, basically. The sludge output, as you know, is largely a function of the amount of homes that are hooked up to domestic water, and they have had a water project coming in from the Colorado River that is bringing more water all the time to the city.

Beyond that, Tijuana is growing at a very rapid rate. If you went up between 1976 and the present time, it has doubled in population. There are going to be about 4 million people living in Tijuana. There are about 1 million people living there today, and there will be about 4 million people there in the year 2020. So it is a radically increasing population. Their sewage system is very incomplete, but what there is of it basically consists of this: If you go to the Tijuana border in San Ysidro, you will see a pumping station known as pumping station No. 1, which is about 50 feet on the south side of the international border. All the sewage that comes down into the low point of the basin, which is where pumping station No. 1 is located, arrives at pumping station No. 1. A number of years ago, the State Department and the cities of Tijuana and San Diego entered into an agreement whereby, on an emergency basis, the city of San Diego could accept Tijuana sewage to avoid it simply spilling into the Tijuana basin, being carried up toward the city of San Diego, and going out on our beaches immediately adjacent to the city.

They used this emergency basis when their lines broke, and the lines chronically break on the Mexican side of the border. Their usage of the Tijuana population doubled and redoubled; the usage of this emergency connection became more and more constant. Today they are using it 365 days a year. They are putting about 13, 14 million gallons a day into this emergency connection. It is basically chockfull.

So we are processing that sludge, sewage, and recently, because the Federal Government was the primary mover in this treaty, the Federal Government has reimbursed, in recent years, the city of San Diego for processing this Mexican sludge. But beyond that 13, 14 million gallons a day, you have about 4 or 5 million gallons that the Mexicans take care of themselves. The way they take care of it is you have a pumping station No. 1 located right on the border about 1½ miles, 2 miles from the ocean.

There is a long line of hills that runs between pumping station No. 1 and the border, basically directly parallel to the international border. They have two lines running out of that pumping station. They are both transite lines, pressure lines. They go up and down these hills. One is a 20-inch line. The other is a 24-inch line. They run straight toward the ocean. Just before they get to the ocean, they pour into an open pond, an open cement canal.

That canal runs south around 5.6 miles south of the border. From there, it simply spews out into the surf. On the Mexican side of the border, it is about 5.5, 5.6 miles south of where our beaches commence.

Even if the Mexicans could pump more of their sewage through these 20- and 24-inch lines, it would still contaminate San Diego's beaches. We are in a position where we can't, even if we had the power, it would not be in our interest to cut this emergency connection off, because it is still so close to our beaches that if we cut it off and they put that 18, 19 million gallons a day total out into the surf 5½ miles south of the border, it would come back and contaminate our beaches to the extent that we would be quarantined on a constant basis. So we are really in a very difficult position.

The Mexicans feel that they have every right to pour this stuff out into the surf, and they feel like they have already done a great deal to allieviate our problem. The 20- and 24-inch lines break constantly, and usually, because they don't run along a roadway like American infrastructure is laid out, in fact, they have a highway that parallels the border. They could run it right along the roadbed on a fairly constant grade. They run it up and down the hills.

Because of this, you have tremendous pressures at some point, and you also have susceptibility to erosion. Last October we had a big rain, and we also had a water line that was next to the sewage lines break, right next to the two lines that parallel the international border. The lines broke; they washed a big gully out underneath the 20- and 24-inch transite sewage lines. They collapsed in the gully. For about 4 months, we had raw sewage running out Smugglers' Canyon into the United States and running right out onto Imperial Beach.

We worked, we sent communique after communique to Mexico City. Ambassador Gavin worked the problem. It was very frustrating, frankly, to see maybe one or two workers out there on that site working to repair those lines while we had literally hundreds of businesses go belly up in the Imperial Beach area, and we saw a real problem, an economic problem as a result of this.

We had nationwide TV covering the terrible sludge spills in San Diego, which isn't conducive to our tourist trade improving during that period of time.

What we finally did, the Mexicans openly made it plain that they would accept no help from us in fixing their lines. Ultimately, we built a holding pond right at the border, and Joe Friedcan, the Commission of IBWC sent a gentleman out. I ordered up some catepillars and some cement people. We built a holding pond and we diverted this 4 to 5 million gallons a day that was going through the lines that parallel the border and ultimately down into the canal and out into the ocean, we diverted that into this holding pond, and because our emergency connection is chockfull almost all the time.

We would hold it until about 12 o'clock midnight, and then we would run it out between the hours of 12 midnight and 5 in the morning into ~~our~~ emergency connection. Basically, the sewer is not being used by people.

So we went from taking care of about 14 million gallons a day of Tijuana sewage to about 18 million gallons a day of Tijuana sewage.

They finally got the line fixed. We put a lot of pressure on them, and the Federal Mexican Government got on the project. I think the Americans could have fixed it in a couple of weeks, but it took them a number of months. They finally got the line fixed. We said "Hallelujah." We turned off the pond and the 20- and 24-inch lines were working again, at least for that 4 million gallons that goes south.

A couple of days later a tractor knocked over the line and broke it again. We put the pond back into use. So at least the emergency pond works for the time being. But the problem is that even with that pond, we are now at maximum capacity. In fact, we have about an extra 100,000 gallons a day running out Smugglers' Canyon right now. We can do nothing about it. We have to let it run down right into the Tijuana River right onto the San Diego beaches, because even the emergency connection that we are using to clear the pond out between midnight and 5 in the morning is now chockfull. We can't take any more.

So we have a radically escalating Mexican population, and we are on the down side of their sewage system, and they realize it, and they think it's our problem.

Let me tell you what we have worked on a number of possible solutions over the years. I think that the solution that Senator Wilson and Senator Cranston have proposed, the $55 million solution 60 million gallons on the border, is a good solution. It is at the low point in the valley there. It is right next to, right adjacent, really, to pumping station No. 1. What it would do, I consider it to be kind of a defensive solution. We would not be taking their sewage up to the Point Moment area and processing it up in our plants, but what we would do is we would be almost immediately adjacent to their plant on the American side of the border, and we take their sewage, we would give it chlorination and primary treatment, and we would shoot it back to them, and they would run it down through their lines to go to the border and then ultimately down the 5.6 miles below the border, or farther, if we can persuade them to extend their lines further south, and out into the ocean.

The primary treatment of this sewage would mitigate the dangerous effects of it to the degree that we could, then, shoot out 15, 20 million gallons a day into the ocean on the Mexican side and it would not come back and harm American beaches. People have looked at a number of different technologies and other solutions, including some real tough leverage against the Mexican Government, and I tell you, we have analyzed the problem for a long time.

It looks like that is the only way we are going to be able to, at least in the next 10, 15, 20 years, to take care of the problem. I know that it is an expensive solution, and it is not one that does a great deal for the people of the United States except that it does keep that raw sewage from coming out of the Tijuana River basin onto our beaches.

I would be happy to answer any questions, Senator, that you might have.

Senator GARN. First, let me just say that I had the opportunity some weeks ago to meet with the present mayor of San Diego, and the junior Senator, Pete Wilson, the former mayor of the city. When he was mayor of San Diego, I was mayor of Salt Lake City, so I am well briefed on the nature of the problem. What I explained to them is we obviously get a lot of requests for appropriations without authorization. Most of them are not this big, they are smaller ones that I guess my colleagues think can be hidden easily. I did encourage both of the Senators and your other House colleagues to do what you could to speed up the authorization process.

If possible, the best thing of all would be a request from the administration, as well, from OMB, and because it is a very grave health problem; I am very well aware of that. One of the problems you mentioned is cost. In your statement you noted that San Diego is requesting $55 million. Senator Cranston and Senator Wilson requested $25 million at this time for startup, so that, well, I suppose it would have more chance. But the reason I raise the issue of cost is: First, I have had all kinds of estimates. It depends on who I talk to. I have heard $70 million; I have heard $500 million. I am told that in one of the provisions in the House, you all had talked about such sums as are necessary. That always scares me on any provision, not just this one.

So what do you think? What is your estimate of what it is going to cost to build a 60 million gallon a day processing plant?

Mr. HUNTER. I am sure glad you asked that question because you know, really, the cost is a function of what time period you are looking at and for what extent of time you need to take care of the problem. Basically, that sewage treatment—and you know, I have looked at it a dozen different ways. It looks to me like you could look at it from a common sense angle. It looks like it adds up to just about $1 million per million gallons per day of treatment. For example, generally speaking, a 30 million gallon per day treatment plant, bare bones facilities costs about $30 million. For $55 million, you are going to get about a 60 million gallon per day capacity; so just about a buck a gallon.

If you look——

Senator GARN. Cheaper than gas? [Laughter.]

Mr. HUNTER. That is right. And that may be one of the reasons, but all we are looking at right now is we have got about a $17, $18 million a day output from San Diego. So the $750 million figure is a figure that would go well into the next century, and it is based on Tijuana quadrupling in population and absolutely no participation by them. It is also based on having something like a $200 million water liaison project, which is a water reclammation project, and is a meritorious approach. It is a good innovative approach to reclammation, but if you are looking at a bare bones facility, it is obviously not something that you have to have, and this thing also looks at $170 million deep ocean outfall, which would be a failsafe. Since we are, in San Diego, at the low end of this basin, if the lines break and you are up to the point where you are producing 100 million gallons a day, you need to have a deep ocean outfall. My gosh, that is $170 million.

So if you look in the short term, we could take care of, built complete, a 60 million gallons facility, which is over three times what the Mexicans are producing right now, for $55 million.

One thing that I think has to be addressed and has to be looked at is the fact that we have to have, beyond the facility—and I might ask the Representative from San Diego, Bill Harrington, to come up here in case I need a little help with this one. Our big problem right now, besides not having a treatment plant there is, again, those miserable lines break constantly that run up and down the hills from pumping station No. 1 to the point where the stuff goes south down the canal. We can have the greatest facility in the world, but if we break that 20- or 24-inch line or the new 42-inch line the Mexicans are putting in right now, they are putting in a steel line now to replace the 20- and 24-inch lines. Those are still going to run down the canal and back into San Diego.

The point is, we are going to need to have, I think, as a defensive system, a collector system along the base of the hills that can catch that emergency drainage to keep it from running into our community, because it is a sad fact that we are downhill from the Mexicans, and if they have a defect or a break in their lines like they commonly have now, whether that stuff is treated or not, it is going to run right back into the United States.

So I will tell you, I can come up with a lot cheaper costs than this $750 million. I think that it is achievable, that the Mexicans have a great deal of relationships with us, economic relationships. They are selling oil to us, and I think that it is an achievable thing to, perhaps, ask some type of an offset in the future, some type of maybe an increase in the pumping of oil by the Mexican Government, the transfer of oil to the United States and its change for taking care of this problem.

The President, as you may know, brought this up with the President of Mexico. In fact, this was the subject of his first executive agreement. I understand some of the people in the State Department weren't happy because here is the President of the United States talking sewage in his first meeting with the President of Mexico. But it is something that has their attention, and Ambassador Bavin has brought it to their attention. I think that if we funded this plant, which is three times the capacity of what the Mexicans have right now—in fact, I would settle for a little less to be frank with you. I would take a 30 or 40 million gallons capacity or a little bit less, because all we have right now is 17 million gallons a day.

But if we did this, we would be able to take care of the problem at least up into the 1990's. The 750 million gallon plant is something that involves a lot of extracts and carries us well into the next century. So that is where you get that big figure.

Is there anything that you would like to add, Bill? I think Bill just mentioned I might want to clarify that it would be 25 in the first year, 35 in the second year for a 55 million gallon or $55 million total. Any way you divide it up, it is still $55 million, but speaking frankly, I would take even less of a capacity if that was necessary to get some dollars for this. In other words, if we fund the $55 million, Mr. Chairman, we are going to have a 60 million gallon capacity, which, again, is three times the Mexican load, although the Mexican load is growing radically.

If we are under tough budgetary constraints, maybe we don't have to go that far out in front. But I think that having a plant on the border and something on the order of that magnitude is the only way we are going to be able to address the problem and make sure that that doesn't come back and haunt us.

Senator GARN. As I said, procedurally, if you can help get an authorization, I would say that if it does go through, my own opinion would be from past experience in working with sewer treatment plants, it is a lot more costly to underbuild than to overbuild. You end up going back, and I have seen this happen in my own State, in my own city, where we underbuilt and where the cost of an additional plant is a lot more than if you had built adequate foreseeable capacity to begin with.

Thank you very much for your testimony.

Mr. HUNTER. Thank you.

Incidentally, Senator, the House Public Works Committee, at least the subcommittee, has authorized a plant on a fairly open ended basis on the House side on the authorization.

Senator GARN. I understand that. Thank you.

Mr. HUNTER. Thank you.

[The statement follows:]

STATEMENT OF REPRESENTATIVE DUNCAN HUNTER OF CALIFORNIA

Mr. Chairman and Members of the Subcommittee, I appreciate the opportunity to testify today on a very serious health hazard in my district.

For years, the citizens of San Diego have suffered the effects of inadequate waste treatment facilities in Tijuana, Mexico. While the City of Tijuana has a population of one million and a sewage flow in excess of 20 million gallons a day, it has no sewage treatment facilities. Instead, under a 1965 agreement, the City of San Diego has been responsible for treating 80 percent of the sewage from Tijuana at a cost of $1.7 million per year. The remainder of Tijuana sewage is pumped to a point 5.6 miles below the international boundary and discharged into the ocean untreated. Regularly these lines, which run parallel to the U.S.-Mexican border, break and pour raw sewage across the international boundary into the Tia Juana River Valley, contaminating farms and ranchland.

This, however, is not the only problem San Diego faces as raw sewage and toxic chemicals are dumped daily into the Tia Juana River. This sewage ends up on the beaches in San Diego and renders them unfit for use. In fact, the coastline north of the international boundary was quarantined 307 days in 1980, 219 days in 1982 and 309 days in 1983. As you would expect this has had a devastating effect on the local economy.

One community in particular--Imperial Beach--has been plauged by the periodic quarantines. During the summer of 1983 this problem reached alarming proportions when releases from the Rodriguez Dam, located in Mexico, were increased, causing the Tia Juana River to flush even larger amounts of raw sewage into the ocean and onto Imperial Beach. For well over a month, Imperial Beach and several beaches to the north, remained quarantined due to a bacteria count 10 times the level considered safe for humans. For the shop and business owners this occured at the very worst time--during their busiest tourist season. Due to the sewage laden beaches, business was off over 50 percent in most restaurants, hotels and shops. One restaurant owner reported an evenings business of 15 dollars; one shop owner in Imperial Beach had a total days sale of only $7.25; and one motel owner lost $40,000 during the month quarantine.

More importantly, however, are the serious health hazards associated with raw sewage discharge. As you are aware, raw sewage carries many diseases: among them, dysentery, typhoid fever and infectious hepatitis. Direct health effects have already begun to appear. Three cases of mouth infection were reported in 1983 and, this year, several cases of hepatitis have been reported, all of which are directly linked to the discharge of raw sewage into the ocean and river.

I think you will agree that this is an intolerable situation.

Mr. Chairman, I believe immediate action must be taken to protect the health of San Diegans. In the past, the U.S. government, through the International Boundary and Water Commission, has worked with the Mexican government to urge that they provide adequate treatment of Tijuana sewage. To date however, the Mexican government has been unable to address this very serious problem. While I believe we must continue to work closely with the Mexican government to secure their participation in a final solution, I also feel the U.S. government must move ahead to address the very serious health implications.

I strongly believe we must address this problem by construction on the U.S. side of the border of a treatment plant which would handle sewage from Tijuana. Earlier this year Rep. Packard and I introduced legislation, H.R. 5329, which would authorize construction of such a plant. As you are probably aware, this language was included in the Subcommittee on Water

Resources Clean Water Reauthorization. I am optimistic that this language will recieve favorable consideration in full Committee on Thursday.

At this time the City of San Diego is requesting $55 million for construction of a 60 million gallon per day plant to treat sewage from Tijuana. The City is requesting $25 million in Fiscal Year 1985. I strongly support this request.

Mr. Chairman, I would like to make one final point as to the need for this U.S. action. By the year 1990, the population of Tijuana will reach 1.4 million and the average daily flow of sewage is projected to be 42 million gallons; by 1995, the population will grow to 1.9 million and 66 million gallons of sewage per day is projected. Finally by the turn of the century, 2.5 million people will live in Tijuana and produce more than 100 million gallons of sewage a day. Mr. Chairman, I am sure you can see from these alarming statistics that we must act now. In order to avert a frightening epidemic, I urge the subcommittee to include funding to address this problem.

I thank you again for allowing me this opportunity to testify and I appreciate your time and attention.

CONCLUSION OF HEARINGS

Senator GARN. That concludes the hearings. The subcommittee will recess and reconvene at the call of the Chair.

[Whereupon, at 3:50 p.m. Tuesday, May 8, the hearings were concluded and the subcommittee was recessed to reconvene at the call of the Chair.]

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